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ADVICE

ON THE CARE OF THE

HEALTH,

WITH REMARKS ON

THE PRESENT STATE OF

HYGIOLOGY.



“Die Natur behauptet mit Nachdruck ihre Recht.”—Schiller.

“Nature emphatically asserts her rights.”

BY

JOHN HARRISON CURTIS, Esq.

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ADVICE ON THE CARE OF THE HEALTH;

WITH REMARKS ON THE

PRESENT STATE OF HYGIOLOGY;

SHOWING THE NECESSITY FOR THE ADOPTION OF

PUBLIC SANATORY MEASURES;

ON

THE CAUSES AND PREVENTION OF DISEASE;

AND ON

AIR, EXERCISE, DIET, BATHING, &C.

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P R E F A C E.

UNTIL comparatively a recent period few persons ever thought of paying any attention to the means by which health might be *preserved* : the conduct of the great majority in all countries was regulated by habit, derived from those who had gone before them, and not from any conscious obedience to the directions of a code of health : the possession or the loss of health was generally regarded as an *accident*, over which individuals had little if any control : if they lost it, they of course had recourse to the “doctor,” who was looked upon as the only competent guardian and restorer of good health.

Of late years, however, all this has been changed : it has been shown that there are *laws* of health as well as of every thing else ; these laws have to some extent been ascertained, and obedience to them has been inculcated as the only means of securing the enjoyment of the blessing of health ; as, on the other hand, it has been satisfactorily proved that neglect of them is perhaps the only cause of disease, and the

celebrated Roman physician, Asclepiades, convinced of this, declared that he would be content to be esteemed a fool, if he were ever ill, or if he died through any thing but old age or accident. Men accordingly, are no longer content with assuming that illness in all cases is a providential infliction; they endeavour to find out how the infliction may be averted, and hence have arisen the various measures and proposals for improving the sanatory condition of the community.

For this great and still increasing advance in public opinion—an advance which is destined to do more for human happiness than perhaps any other, as there can be no real happiness without health, which of itself is the source of so much enjoyment, and is indispensable to the full appreciation of every other means of happiness—is chiefly due to the efforts of the medical profession, many distinguished members of which have written popular works on the preservation of health, which have had an extensive sale, and been of great public utility. In so doing their disinterestedness is deserving of high commendation, since there can be no doubt that the occupation of the medical profession must be sensibly diminished by every increase in the health of the community at large. On this point, also, it is truly observed by Mr. Farr, in his last report to the Registrar-General, that “this is the more praiseworthy in the members of the medical profession, inasmuch as the colleges do not prescribe, nor the

schools provide, as in other countries, any systematic course of instruction in hygiology (the *hygiène* of the French). The art of preserving health is not yet taught in the medical schools of England, and it is only just to add that it is not paid for in any shape by the public."

The movement thus commenced by the members of the medical profession, although it must be confessed that some of them have been opposed to it as injurious to their own interests, has been taken up and continued more extensively and systematically by various government bodies, and inquiries have been set on foot which will no doubt hereafter serve as bases for the introduction of some comprehensive scheme of sanatory legislation—the authors of which, whoever they may be, will deserve the enduring gratitude of every member of the community in all time coming—compared to *their* well-earned renown, that of all the conquerors who ever lived will appear false and vain indeed !

My own attention was called to the subject of the preservation of health by observing, in the course of my practice as an aurist and oculist, that in perhaps the majority of cases the diseases of the ear and eye proceeded from ill-health, occasioned by neglect of even the simplest sanatory precautions. I found, then, that it was in vain to attempt curing those diseases until the general constitutional derangement was removed, which being done, the special affections of the ear and eye frequently disappeared of them-

selves, or were at all events easily cured ; I came to the conclusion, therefore, that, in order to hear and see well, it is necessary to be in good health ; and my inquiries were next directed to ascertain the laws, obedience to which will secure the enjoyment of that blessing.

The first results of my inquiries were published nearly ten years ago ; and several succeeding editions of my work “On Simplicity of Living,” have been considerably enlarged, by adding thereto the further results subsequently arrived at. This book has had an extensive circulation, not only in this country but also on the Continent, having been translated into various foreign languages, and I may venture to say, it has exercised no inconsiderable influence upon public opinion, and promoted the cause of public health.

Finding, however, that some classes of society, who at first took no interest in the question, are now beginning to awake to a sense of its importance, as evinced in the efforts now making by the working classes at Edinburgh and London for the establishment of baths and washing-houses, I have been anxious to furnish, in a cheaper form than has hitherto appeared, an exposition of the leading laws of health, so that the public generally may have a manual suited to their wants, by which they may be directed in their efforts to improve their sanatory condition. Another motive to so doing, was the personal knowledge I have of the wretched state in which the

poorer classes generally are at present in respect of all the influences which act upon health, a knowledge derived from many years intercourse with them as Surgeon of the Royal Dispensary for the Diseases of the Ear—by far the greater number of the patients of which Institution become deaf through the extremely unhealthy circumstances to which they are exposed.

Among these none is more injurious than the crowded manner in which they live:—a subject to which I have referred in this work, and for which evil the society lately established for the purpose of erecting houses adapted for the working classes would furnish a remedy. All the neighbourhoods now occupied by the poor were once inhabited by the rich, and the houses in them are not at all adapted for the use of the working classes. They are not only dilapidated, but the plan of their construction is altogether unsuitable. There can be no doubt that, as a mere pecuniary speculation, the society above mentioned will succeed, but it should be aided by the public at large.

To one point I would here direct particular attention—namely, the danger to which we are exposed of some wide-spread epidemic breaking out among us. Into this I have fully entered, and have pointed out the measures which ought, without loss of time, to be adopted to prevent such a consequence of the unhealthy condition of the metropolis and other large towns.

In my various tours on the Continent, for the purpose of studying the foreign modes of treating diseases of the Ear and Eye, and in the course of which I have visited nearly all the principal hospitals in Europe, I have always been an attentive observer of whatever bears upon the public health, and have thus often become acquainted with arrangements which struck me as being well worthy of imitation in our own country—of many of these I have given an account in the following pages, and hope that they will be found to furnish useful hints to our legislators and others in authority.

Should the present work contribute in any degree to the promotion of the cause of public health—that is, of public morality and happiness—I shall esteem myself amply repaid for the time spent in composing it.

JOHN HARRISON CURTIS.

2, Soho Square, November, 1844.

HYGILOGY.

To write a treatise on the value of health would certainly be a work of supererogation: few things are so universally admitted and felt, and nothing that the writer could say would be so convincing as the personal experience of every individual. As in many other cases, however, men are most acutely sensible of the importance and blessing of health when they are deprived of it; at such times nothing in their eyes is comparable to it; there is nothing they would not willingly do to recover the lost treasure; no sacrifice to which they would not gladly submit; but when they have perchance by these means again become healthy, they, too generally, relapse into their old habits, to which it is probable their ill-health was, in the first instance, attributable; it being a truth deserving of the utmost consideration, that disease is, in the great majority of cases, caused by imprudence, by neglect of the most obvious laws of our being. This is partly owing to the force of habit, and to the difficulty which men generally experience in following a prescribed course of conduct, and partly to a real ignorance of the laws of health; many men, otherwise well instructed, know absolutely nothing of the animal economy, nor of the influences which act upon it—to them health and disease appear to be mere accidents, which come and go without assignable cause, and which are totally beyond our control. Many works have been published of late years upon this subject, and have done much to dispel the dark clouds of ignorance which enveloped it; but most of them have been addressed to the higher classes—the rest of the community has been left uninstructed; and, it is with a view to diffuse still more widely a knowledge of the most important laws of health, that the following pages have been written.

In the human being, the body and its functions stand in the same relation to the mind and its operations and affections as the root of a tree does to the trunk, branches, and leaves. As an abstract truth, it may be well enough to talk of the separate and independent existence of the mind, but every day's experience proves that, in the present condition, at least, of man, the body

exercises vast influence upon the mind, which, in its turn, reacts upon the body. It follows, as an evident corollary, that it is vain to think of bringing about any change in the physical or moral condition of men, without taking into consideration both the parts of which their constitution is composed, and that every plan for their amelioration must be based upon their bodily as well as upon their intellectual qualities. It is at length beginning to be seen and acknowledged that those who have for half a century or more been striving to effect improvements in the intellectual and moral condition of the great mass of society, by means of religious, moral, and intellectual instruction, have sadly mistaken the true method of procedure : the little result produced by their sincere labours has forced this unwelcome truth upon the minds of most men ; and many have set themselves to discover the causes of this lamentable failure, and better modes of procedure for the future. The conclusion to which most inquirers have come is that which I have already indicated, namely, that the want of success on the part of those who have been engaged in instructing the people arises from their neglect of the bodily condition of the community, and that the first step towards a more cheering state of things is to provide means for increasing the physical well-being and comfort of the people. To this conviction are due the inquiries into the sanatory condition of towns, which have been conducted under the auspices of the government, the efforts to procure an abridgment of the hours of labour, to improve the habitations of the working classes, to provide open spaces for large towns, to establish public baths, &c, &c. ; efforts which promise to be of the greatest service, and to lead to the most beneficial results.

In writing the following pages, it has been my design to forward this good work by briefly setting forth the chief objects to be kept in view by those who are anxious to improve the sanatory condition of our country, and at the same time to furnish a short manual of health for individual use. I do not pretend to give minute directions, which can seldom be of much use, but only to lay down the broad, general principles by which those who wish to preserve their health must direct their actions ; the individual circumstances of each can alone determine the particular modifications of these principles that are necessary. I am the more induced to confine myself, in the present instance, to the leading points of this subject, because I have already, in my work on "Simplicity of Living," entered fully into its details, so that any one who wishes for more minute information, may find it in that book, which, I am proud to say, has done much to awaken public attention to a subject which previously was comparatively neglected, and which may fairly be considered as having contributed in no slight degree to the movement now everywhere apparent towards

a better state of things as regards the sanatory condition of this country.*

In former times medical men contented themselves with euring, or endeavouring to cure, diseases,—they seldom thought it their province to *prevent* disease, or to point out and advoeate the modes by whieh this object could be attained, so that as they were the only class of men who could concern themselves with this matter to any useful purpose, their negleet was neessarily attended with a complete disregard of it. Of late, however, many medical men have taken a wider and more liberal, as well as benefieent view of the duties of their profession, and have been forward in studying the eauses of disease, with a view to their prevention, and they have aseertained that the majority of diseases arise from circumstanees in the social arrangements of eivilised communities which are capable of alteration and improvement. They have gone further, and have specified the means by whieh this may be effected—by whieh the sanatory eondition of nations may be so greatly improved that disease and mortality shall be almost indefinitely diminished, and the happiness of mankind increased in an equal ratio. Among these writers may be mentioned Dr. Leonard Stewart, who, in an anniversary oration delivered before the London Medical Soeity, took for his subject “Publie Health,” from which the following is an extraet:

“Our prevalent sufferings are therefore connected with modes of life and soeial eonditions which are not incapable of reform. Such, for instanee, as the precoeious labour of ehildren, the sedentary oeeupations of females, the inhaling of dust and fine particles by men.

“There is a great deal that can be traced to what is familiar and tangible—as, to dirty and insufficient elothing, damaged provisions, over-erowded rooms, excessive toil, intemperance—often to ignorance and prejudice.

“We eannot for a moment doubt, that by investigating and eorrecting these, and many other improper habits of a similar eharaeter, much unmixed good may be done.”

The following professional men also have written on the preservation of health; Dr. Combe, Dr. Southwood Smith, Dr. Hodgson, and Sir A. Carlisle, late President of the College of Surgeons: remarks on the same subject have been published in the “Medical Gazette,” the “Medieal Times,” and the “Lan-heet;” the latter had a very excellent artiele on “The Influence of the Daily Employment of the Working People upon their Health,” in whieh the writer says,

“This is a subjeet of great national importanee, and to me-

* The Fourth Edition of this work, price 6s. 6d., may be had of Mr. Thomas Tegg, bookseller, Cheapside.

dical men one of the deepest interest, for they constantly meet with the most painful abridgments of life from injurious occupations, and all those consequent evils of early widowhood and orphanage which so materially affect the well-being and happiness of the community generally. Occasionally, the Legislature has prevented a few of the physical evils that result from improper or excessive labour, as in the cases of boy-sweeps, factory children, and children in mines; and, in the course of the inquiries instituted in the Parliamentary Committees and by the Poor-law Commissioners and the Registrar-General, so great a mass of facts has been accumulated respecting the health, employment, modes of life, and lodgment of various classes, as to furnish the groundwork for framing a very stringent Act, compelling builders to allow proper space, sewerage, &c., in and for their houses and other erections, and an Act for regulating the size and ventilation of workshops, and other places occupied by the classes who have no control themselves over new buildings."

I have much pleasure also in quoting the following judicious remarks from the "Medieval Times" upon the same subject, in noticing a former work of mine on health :

" However neglectful public authorities have been in providing for their subjects' protection from disease, we may still congratulate ourselves, as upon one of the results of advancing civilisation, that they no longer pretend to excuse their inattention in any silly faith that the spread of diseases is to be looked upon as solely the result of a supernatural power immediately interfering with the operation of the ordinary physical laws. The public writer, in these days, has only to prove that certain given causes, producing disease as their necessary effect, are allowed an unchecked range of action, when they might be removed by a due interposition of law, and the ruler resisting a change stands self-condemned, either of gross incompetency for his duties, or of a very wicked apathy in their discharge.

" Now, while we admit that *much* has been recently done, favourable in certain directions to public health, it cannot be too prominently set forth, that there are numerous widely-spread agents in daily operation against the sanatory condition, especially of the humbler residents of our towns, which, while only to be checked or removed by the governing power of the State, find in that governing power sometimes active support, frequently countenance, always impunity. We need only refer to the thousand nuisances which no public officer ever feels it necessary to abate, to see that the accusation which lies at the door of our laws, might have been couched in terms still stronger than those we have used, and yet be far from outstripping the truth.

" The great difficulty in reaching any of the improvements that are required, are the private interests more or less vested in every abuse. But a great public good is not for ever to be post-

poned to a petty personal interest. If it were, we know of no class who would be more justified in resisting a change of our present system than our own profession. The great mortality of children in the lower classes, evidenced by statistical research—the constant presence of *spreading* fever in dirty districts of our towns—the high rate of mortality among certain classes of our artificers—and a thousand well-known facts like these, are only to be thought on to convince us that one-third of our practice depends on causes which wise laws, and a vigilant administration, might reduce to nonentity. Yet, if any class be found resisting this great improvement, or seeking to encumber public benefits by demands of private indemnity, we think we may pledge ourselves it will not be ours: and the circumstance leads us to a consolatory reflection, with which we shall conclude:—The age is not wholly worthless which presents medical men demanding the prevention of disease—and lawyers enacting the simplicity of litigation."

Inasmuch as the constitution of every human being is derived from that of its parents, and is liable to be greatly influenced by their health, it is evident that parents should begin to take care of their children's health even before they are born: their imprudence and neglect may be the causes of weakness and predisposition to disease in the constitution of their children; and if so, no after care can ever wholly repair the mischief thus done: ill-health must be the lot of those whose parents have shown themselves so ignorant or so insensible to the duties they owe to their offspring.

The infant being born healthy, the next care is to preserve it in that condition—a task of no slight difficulty, and one which demands unremitting and untiring watchfulness. An infant is extremely weak, extremely susceptible: the functions of the animal economy are in it liable to disturbance by causes which in the more mature are altogether unimportant, and disturbances of the functions which in the strong produce merely inconvenience, are fatal, or productive of serious and lasting disease. The following brief outline of the main points to be attended to in the treatment of children should be deeply impressed on the minds of all to whom they are intrusted.

And here I may at the outset remark, that many grievous errors will be avoided, and the care of the young rendered much more easy, if we attend, as far as practicable, to the monitions of nature, and to the peculiar circumstances of the human infant. Theoretical and abstract plans for the rearing of the young too often neglect these considerations, and proceed upon some fanciful hypothesis, and endeavour to bring about some result which the theorists consider desirable, but which nature often disowns—such plans must necessarily prove injurious to the health of those who are subjected to them in the exact ratio that they depart from the dictates of nature.

The circulation of the young is chiefly in the surface and extremities of the body, and any cause which drives the blood from the skin into the internal organs, thus destroying the natural distribution of the blood, produces diseases of the most serious and fatal kind. Hence they should be carefully protected from exposure to cold, their clothing should be warm, though light, they should be washed with luke-warm water, and never exposed to cold air. By these means the pores of the skin and the capillaries (smallest arteries) are kept open, and the blood is enabled to circulate upon the surface of the body. Cold, on the contrary, contracts the pores and the capillaries, and forces the blood upon the internal organs, the brain, lungs, and intestines, giving rise to convulsions, violent colds, diarrhoea, &c., &c., which so frequently prove fatal. It is evident, therefore, that those who, with a view of *hardening* children, plunge them into cold baths, suffer them to go scantily clad, or send them out into the open air in cold weather, are, in reality adopting the most effectual means to undermine their constitutions, even if they do not at once sink under treatment so utterly opposed to the requirements of nature.

In insisting upon the necessity for shielding the young from the cold, I am far from intending to support the views of those who seem to think that it is impossible to heap too much clothing upon children, and who even in summer burden them with all sorts of contrivances for excluding the air from contact with their bodies. This plan is almost as bad as the opposite one, tending to enfeeble the system by promoting undue perspiration. Children should, in fact, be kept *cool* in summer and *warm* in winter, but never be allowed to become either *cold* or *hot*. Flannels should never be worn next to the skin of children, except in very delicate constitutions.

Cleanliness is essential to the perfect health of children—cleanliness that is of the whole body, which should frequently be washed all over with tepid water; their clothes also should be kept perfectly clean, as the skin absorbs whatever is in contact with it—one of the most injurious things that can be done, either by the young or by adults, is to wear dirty flannels.

The digestive organs of infants are extremely feeble, and they are destitute of teeth, which have so important an office to perform preliminary to that of the stomach. The kind of food given to them must, therefore, be simple and nutritious, and at the same time easily digestible. Now all these qualities are combined, in a remarkable degree, in the food provided by nature herself for the support of the infant—its mother's milk. This is the only nourishment that should be given to children until the teeth begin to appear; and, provided the mother be healthy, the infant will be found to thrive the best, whose diet has been exclusively this.

The appearance of the teeth indicates the time when weaning should commence, and food of a more solid kind be given. No precise date can be assigned for this purpose — neither nine months, nor twelve, nor eighteen, are universally the proper ages : the proper age is that above indicated; namely, when dentition begins.

At first, farinaceous food, prepared with milk and water, should alone be given ; afterwards, when the canine or eye teeth appear, a small proportion of well-cooked and tender animal food may be carefully added, due attention being paid to the effect produced upon the child by this diet, and thorough mastication being from the first insisted upon. At no period of youth should animal food be given to the exclusion of vegetable food ; nor should it constitute more than a small proportion of the food of the young. Neglect of this rule gives rise to a febrile and over excited state of the system, which predisposes it to many destructive forms of disease.

Fermented liquors of any kind are rarely otherwise than hurtful even to adults ; but to the susceptible and highly nervous bodies of infants and children, they are almost poisonous. No parent who allows his child to partake of them, can possibly be aware of what he is doing,—of the evils which his foolish indulgence is entailing upon his child.

In regard to the quantity of food, no general rule can be laid down ; but the natural healthy appetite of children is the best and only needful guide. So long as plain food only is given, they may safely be allowed to eat until they no longer desire to do so : the instinct to cease eating is, in well brought up children, almost as strong as the appetite to eat.

In reference to muscular exercise also, nature is our chief guide ; and this shows that crawling is the first kind of exercise adapted for infants. Their limbs are not yet sufficiently strong to sustain the weight of the body, and deformity must result from untimely endeavours to compel them to walk : let the child crawl until it has a desire to raise itself upon its feet—then assist it in its efforts, and gradually it will acquire the habit without labour, which many persons take so much pains to teach to infants.

When the child can run alone, it may be left to itself to determine the quantity of exercise suitable for it: as soon as the proper limit approaches, fatigue will be felt in its limbs, and this will prompt to a cessation from exertion. The only precaution that need be taken, is to provide places for the exercise of children, in which they may, without danger, move about at their ease. Above all, let them always have an abundant supply of pure air. All the functions of their animal economy are carried on with so much rapidity, and their nervous system is so excitable

and susceptible, that any deterioration in the quality of their blood, which must result from a deficient supply of pure air, produces effects upon them of a far more powerful description than would arise from a similar cause acting upon adults. Let their nurseries, sleeping-rooms, and school-rooms, be thoroughly though carefully ventilated.

The last point which need here be noticed in reference to children, is their sleep—the duration of which must be determined by their inclination to sleep—to lengthen or to shorten this period by artificial means cannot but be hurtful; the amount of rest being exactly determined by the need for it.

The school education of children should not begin at an early age. Up to the age of six or seven, the brain is not in a condition to carry on the organic functions of the body as they need till that time to be performed, and at the same time, to devote its energies to the intellectual tasks imposed upon it at school. To endeavour to make it do so must prove unavailing; either mind predominates over body—the latter becoming weak, sickly, and incapable of perfect development—or the vigour of the bodily functions interferes with the attention of the mind to its intellectual occupations, and the child is incorrectly looked upon as a stupid, dull creature, of whom no hopes of mental proficiency can be entertained. Incorrectly, for many of the most distinguished men who have ever lived, have been called dunces in their schoolboy days, while the greater part of those whose early and precocious mental displays have awakened the proudest hopes in their parents and teachers, have either sunk into untimely graves, or have utterly disappointed the expectations that had been formed of them.

An error which often leads to deplorable results, and is extremely common in this country, is the administration of medicine to infants and children, on all occasions, by their parents or nurses. More medicine is consumed in England than in the whole of Germany, and when improperly given, occasions more disease than it cures. It is generally dangerous to administer medicine without medical sanction, and the continual use of drugs tends to pervert the animal functions, and finally deprives the medicine itself of its efficacy.

Attention to these rules would, in most cases, be found sufficient to preserve the young in health, and certainly diminish the alarming mortality among them, such as is shown by the fact, that in the lowest districts of Manchester and Leeds, of 1000 children born, more than 570 die before the age of twenty.

When the period of youth arrives, the body, it is true, has become stronger, and capable of greater resistance to external agents, but at the same time, the occasions and the temptations

to infringements of the laws of health are greatly multiplied, and render additional cautions necessary.

Foremost among the evils to which the youthful are exposed, are those arising from excessive muscular exertion. Full of life and spirit, they are too apt, when engaged in their pastimes and trials of skill, to neglect the warnings given by their aching limbs, that already they have passed the bounds of prudence, and that their bodies require repose : they cease their exertions only when compelled by the failure of their strength : and this being continually repeated, consumes their vital powers, and lays them upon the bed of sickness, from which they frequently never rise again.

These evils arise in a great measure from the young being left too much to themselves in their sports and exercises ; it is not yet recognised that they need as much superintendence in what concerns the body as in what relates to the mind ; when this truth is admitted, a teacher of gymnastics will be as necessary a person at our public schools, as the teacher of any branch of mental learning. Such a teacher would have the care of all the exercises of the pupils—adapting them to the various capacities and strength of each—determining the length of time during which each species of exercise should be taken—and the order in which they should succeed one another. When such a system as this is adopted, many evils which now prevail will be prevented, and the physical and intellectual development of the young will proceed harmoniously together, being mutually assisted by each other.

One caution respecting the time for exercise is especially needed by the young, whose incessant craving for movement, frequently leads them to disregard those feelings which would otherwise show them that it was improper; and this is, that exertion immediately after meals is decidedly injurious. At this time, any exercise, beyond very gentle walking, interrupts the process of digestion, then in full activity; for the contraction of the muscles concerned in the production of motion, diverts the course of the blood from the stomach, where it is needed to supply the gastric juice by which the food is digested, into the limbs; and the stomach is thus rendered incapable of performing its functions. Hence arises that feeling of pain which is generally produced by motion directly after a hearty meal, and which should serve as a warning of the evils to be anticipated from so foolish a practice. The Americans are said to be the most rapid eaters, and to sit the shortest time after meals, of any civilised nation, and they are also the most subject to dyspepsia. I have, however, heard of “men of business” in Manchester and Leeds who might successfully compete with our transatlantic brethren in this respect, their notion being that the man who is slow at his meals must be slow at every thing else.

A species of exercise which combines in its favour several powerful recommendations, and which is peculiarly adapted for the young, is swimming: it calls into vigorous play the muscles of every part of the body, exerts a tonic and strengthening influence upon the nervous system, and conduces to that perfect personal cleanliness which is one of the best safeguards of health, and by giving rise to feelings of comfort, removes many sources of irritation and disease.

In taking the exercise of swimming, however, as in all other cases, the feeling of fatigue must be at once attended to, and the exercise forthwith discontinued: were this always done, we should not hear of so many lamentable losses of lives, occurring to persons while swimming; but the feeling in question being disregarded, the nervous and muscular systems become exhausted, cramp ensues, and the swimmer sinks like a stone to the bottom.

The clothing of the young should be warm, and not fit them tightly. The dress of girls is frequently such as to do them permanent injury, by the compression to which it subjects their tender and pliable bodies: thus, by means of fashionable stays, their shape is completely spoiled, and by the form of the chest being altered, their lungs are impeded in their action, and no longer efficiently purify the blood: this occasions general debility and ill health, which, on the first opportunity,—a severe cold, for instance—is converted into consumption—the disease so fatal to the young women of our country. Another common source of discomfort, and even indirectly of positive disease, is the wearing of tight shoes, which every one knows produces corns, and other painful excrescences upon the feet. Did the evil end here, however, it would be comparatively trifling; but these corns often serve as an excuse for not taking exercise, and sometimes they really incapacitate for so doing; and this want of exercise in the open air is another principal cause of ill health among females. Could the ladies but be persuaded that nothing is becoming or adornning that interferes in any way with the performance of all the functions of the body, we should find the most effectual means of putting an end to the pernicious practices here referred to, for they seem willingly to submit to martyrdom in any form, if they can thereby add, as they suppose, to their charms: to prove that such and such things are hurtful to their health is nothing: the question—the only question with them is—*does it look well?* To this question, however, we may safely answer by an emphatic, No: nature is consistent and harmonious in all its proceedings; that which is healthful is also beautiful—that which promotes the well being of the body, has a reflex action upon the condition of the mind.

And this brings us to a question of considerable importance in

the present age of intellectual activity and of the diffusion of education ; an age in which the care and labour bestowed upon mental training has to some extent caused the wants of the body to be overlooked. Some zealous educationists, in their zeal to develop and exercise the mental powers, forget that the physical faculties require their proper degree of care and training, and that it is impossible to neglect them without serious consequences, not only to the body, but also to that mind, the cultivation of which is the excuse for neglecting the other, and that the highest vigour of the mind is generally found in connexion with bodily strength and activity.

Hence great care should be taken not to overtask the young with the labours of the study : the hours devoted to the business of the school are generally too long, so that the mind, and body too, of the scholars becomes enervated and weary—the mind by being kept too long upon the stretch in its application to the same kinds of subjects, and the body by the want of that exercise which its well-being demands. A better plan would be to divide the school day into several portions, with considerable intervals between them for the meals and for duly regulated exercises ; this plan would enable the pupils to attend with steadiness and energy to their studies, and, at the same time, would promote their health.

The young should be accustomed to early rising, as a practice which greatly conduces to health, and when it is firmly established guards against many bad and hurtful habits.

The sleep of the young should be regulated in the same way as that of infants and children, that is, the disposition to sleep should determine its duration.

Lastly, the food of the young should be simple and nutritious, but not stimulating. The vigour with which all the functions of life proceed in them render stimulants of any kind not only needless, but positively injurious.

Variety of food, however, is highly desirable and necessary ; any single kind of food, however nutritious in itself, is not sufficient to maintain the animal economy in full vigour : a remarkable fact which has been abundantly proved by many curious experiments.

We now come to the period of maturity—to that period of life in which there is greater exposure to influences injurious to health, stronger temptations to neglect the laws by which it is governed, and in which those instincts by which the young are to a considerable extent guided have either been much weakened, or are overborne by the voice of passion and interest. It is the period of life also in which all the habits are confirmed ; so that however manifestly bad many of them may be, it is only by a

great and decided effort that they can be departed from: even the severe lessons of experience are not always able to free men from the trammels of custom and prejudice, which often broken, are again and again woven around them.

In this country, and in our own day, the subject of health as a matter of public concern, is exciting great attention; and whatever is in any manner connected with the sanitary condition of the people at large is generally admitted to deserve calm consideration. Already many practical measures have been introduced, with a view to diminish the amount of disease and consequent misery, and inquiries under the auspices of government have been set on foot with a view to further and more extensive proceedings in the same direction. It would be unjust not to acknowledge the valuable services rendered to the cause of health by the investigations conducted under the direction of the Poor Law Commissioners; the statistical results of which have placed in a clear and tangible shape the evils produced by inattention to the public health, and which might be wholly removed by a wiser and more beneficent administration of public affairs. In the following pages I shall avail myself of these documents wherever they are available.

I shall commence this part of my subject by what relates to the digestive functions, because, upon them, more than perhaps upon any others, depends the well-being of the whole system, and their derangement is necessarily attended with evil to the rest of the economy. Besides, greater errors are committed in reference to this subject than to any other connected with health, and they occur more frequently, being, in fact, a part of daily routine. Hence, it need not occasion surprise when we learn that disorders arising from this source are among the most numerous and fatal in the bills of mortality.

One of the chief evils to be avoided in this matter is *excess* of food. The majority of persons in this country who belong to the classes in easy circumstances eat far too much—especially too much animal food. Some such persons commence by eating rump-steaks or mutton-chops in the morning at breakfast, do the same, or something similar, about one or two o'clock, dine sumptuously at six or seven, and perhaps take a supper shortly before going to bed. Now such a mode of life may do tolerably well for persons who are constantly in the open air, and take much exercise: it may even be necessary for sportsmen, or for those who live in very cold climates, but for men and women who lead sedentary lives, who scarcely ever walk or expose themselves to the dangers of cold air or water, it is as unfitted in every respect as can be conceived. The prevalent notion among those who follow this mode of life is, that the more meat and other food they eat, the more nourishment do they derive; but this is a total error.

In the first place, the powers of assimilation are bounded by the requirements of the system; so that no more food can be converted into nourishment than is actually needed to compensate for the waste that is constantly going on: now in persons who lead a sedentary life this waste is comparatively small, for in them the bodily functions are generally carried on in a feeble manner, and little is needed to support them; so that a very moderate diet would be amply sufficient; and this fact would be indicated by the state of the appetite, were its monitions at all regarded or obeyed by such persons; but no, they are wiser than nature, and eat, not because there is a necessity for eating, but because their perverted palate requires a stimulus; in fact, we often hear them complaining that they have no appetite, and recounting the various plans to which they have had recourse to gain a fictitious one—plans which seldom or ever are the proper ones—exercise, moderation, and abstinence, but generally consist in some provocative to further eating.

Another proof of the mistake made by those who suppose that the nourishment derived is in exact proportion to the quantity of food taken is this:—that the digestion and consequent assimilation of the food is effected through the agency of the gastric juice, which is eliminated by the coats of the stomach; and of this solvent the supply at any one time is limited; in fact, it seems to be determined by the needs of the system. What, then, ensues when the quantity of food taken is not limited by the appetite, but by the perverted will of the individual? This: the digestive organs are overloaded; their functions are impeded; in their efforts to dispose of the materials heaped upon them, they become exhausted, and incapable of carrying on the process; so that instead of the whole quantity of food being digested and assimilated, only a very small portion is so converted, the rest remains a load and burden upon the whole economy, giving rise to indigestion, and the long train of ills which attend it. Most completely mistaken, then, are those who affect to defend their immoderate consumption of food, on the ground that it promotes their strength—it does precisely the reverse—and the conduct of such persons cannot be more pithily or truly described than by the words which a strange personage once applied to them, “They are digging their graves with their teeth.”

The proper plan to be observed in reference to diet, is such as the following; which, however, it must be remembered is a general sketch—to be filled up in the details according to the individual circumstances of each.

First of all, let the appetite be carefully attended to. The appetite, or hunger, is a sensation arising from the action of the gastric juice upon the nerves of the stomach—the presence of that liquid there indicates that the system has need of food, and

the feeling of hunger is the kind warning of nature to man, who but for this would have no means of ascertaining when support is required, and might thus go on without food so long as seriously to weaken the frame—as sometimes happens even in spite of this beautiful arrangement, when men are under the influence of strong emotions, or deeply absorbed in mental labour, by which their attention is so strongly attracted, that the bodily sensations are neglected.

So long, then, as the appetite is healthy—that is, natural and unperverted—it ought to be our only guide as to the quantity of food, and the times for taking it. It may be objected that this latter rule, respecting the time, is often impracticable—that the duties of society interfere in such a way as to render compliance with it impossible. This may be true if the rule be understood to mean that the meal times should not be fixed, but continually changed in obedience to the variations in appetite; but this is not its meaning. What it means is, that the appetite should always be attended to; that if hunger be felt, some food should be taken; and this could almost always be done without inconvenience. An illustration will show more clearly what is here intended. Many merchants and men of business in London live in the suburbs at a considerable distance from the city, and to them it would be highly inconvenient to return home to dine about the middle of the day, and then come back to their places of business. Accordingly, they dine after the labours of the day are over. But is there any necessity for going entirely without food the whole day, from breakfast to dinner-time, as very many of them do? Certainly not—a biscuit could easily be taken without interfering in any way with business, and would be sufficient to satisfy the appetite at the time, and so far from destroying the relish for the dinner at six or seven o'clock, would keep the stomach in a fit condition to digest it. In fact, nothing can be more weakening to the stomach than to keep it empty for seven or eight hours, and then load it with a superabundance of food.

Animal food once a day is, in most cases sufficient—for sedentary persons, it certainly is; those who are more actively engaged may, with advantage, eat a more solid breakfast; but animal food at supper—in fact, any supper at all is almost always hurtful—especially when the dinner-hour is so late, as it now generally is.

As to the liquid food, there can be no doubt that the natural and most wholesome drink is pure water—or those simple unexciting beverages, of which water is the basis. For persons in health, the less they take of alcoholic liquors the better—better, not merely in reference to their mental and moral welfare, but especially for their bodily health. They supply no nourishment

whatever, acting upon the system merely as stimulants, exciting the brain and heart to undue action, which is necessarily followed by the reaction of depression. The extremely injurious effects produced by indulgence in such liquors, is shown by the fearful fact, that about one-half of the insane in this country are said to have fallen into that wretched condition through this cause ; and it must be recollected that insanity is seldom or ever a purely mental affection—but generally arises from, and is connected with, serious disturbance of the bodily health.

It is, however, perhaps too much to expect that people will be induced to return to the natural beverage, so long as it is supplied to them in the impure state in which it reaches the inhabitants of London, and of most large towns in this country—in fact, such water is neither palatable nor wholesome ; and it is one of the evils affecting the public health which calls most loudly for correction, and the remedy for which is by no means difficult.

London is built on a soil which abounds in springs of the purest water. In the words of Mr. Farr, “ Pure water is abundant, and would flow under almost every street ;” and yet it is justly considered quite a luxury to be able to get a draught of good spring water, the number of pumps in London being very small in comparison to its extent. For instance, in the parish of St. Ann’s, Soho, there are only five pumps, the population being 16,480. This is especially the case in the more modern parts of the town ; in the city, pumps are comparatively numerous, while in the outskirts and suburbs they are “ few and far between.” This is a state of things that should be remedied ; and a beginning might be made by erecting a line of pumps from one extremity of London to the other, commencing at the western end of Piccadilly and Oxford-street, and thence to the east end of the town. At all events, it should be made incumbent on the projectors of all new streets and squares to erect pumps in them ; and in proper situations, fountains might also be provided ; and, by boring to a sufficient depth, a spring might often be found which would cause the fountain to play day and night, without the aid of machinery—no uncommon thing on the Continent : what has recently been effected in this way at Paris and Vienna affords every encouragement for similar attempts here. All over Germany I observed that pumps and fountains are numerous in the towns. In Berlin alone there are upwards of 2000 public pumps.

On the Continent, indeed, every opportunity seems to be taken to form fountains, and they are often found in connexion with statues. Thus at Aix-la-Chapelle, the famous statue of Charlemagne, has a fountain on each side, from which fine water is constantly flowing, day and night, and which, besides being of public utility, add considerably to the beauty of the work of art. Much as

I admire the statue of the Duke of Wellington lately erected in the City, it would, I think, be improved by the addition of a fountain, which would be extremely useful also in that crowded part of the metropolis. I believe that were fine spring water always procurable at the chop-houses and taverns, it would very generally be preferred to fermented drinks; and this is probably the reason why it is so seldom to be got; at least this was the cause once assigned to me by a tavern-keeper. Such a beverage would certainly be much better for the merchants and their clerks, who, after lunching or dining, have to return to their desks and their calculations, than the "heavy wet" which they are in a measure compelled to drink, and which must muddle their brains, and render them comparatively unfit for their business. Still I am far from saying that nothing but water should be drunk. The light French wines are very wholesome, and a reduction of the duties upon them would be a real boon to the people of this country, and greatly promote the cause of rational temperance. Really good water is extremely pleasant to the taste, a truth of which I was never more sensible than at Brussels and Munich, where the water is remarkably pure and good.

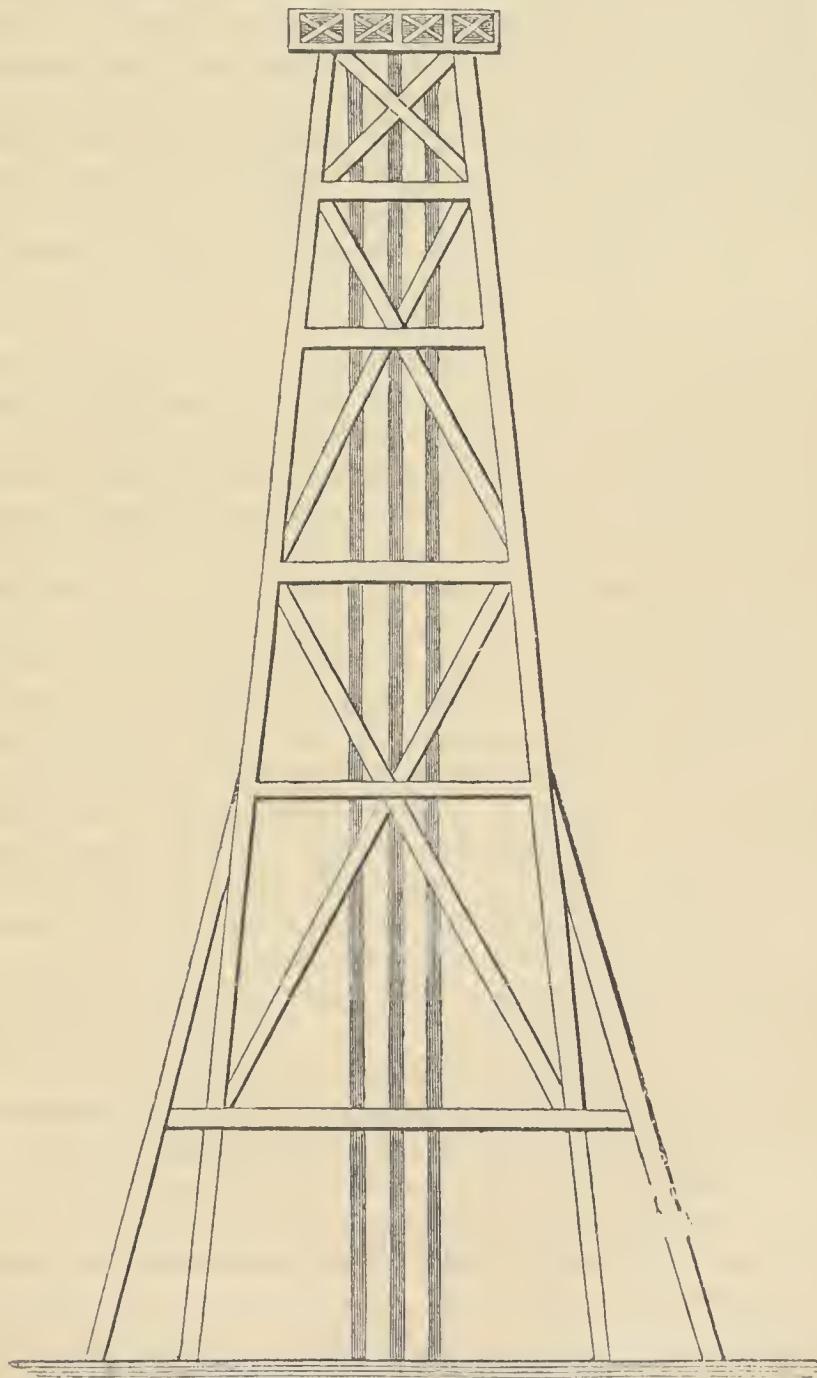
A still better method of supplying the wants of London in respect of water, would be the formation of several Artesian wells in various parts of the metropolis—the water procured by means of them being distributed in the same way as at present in use.

As this is a subject of considerable importance, and one which is at present comparatively unknown in this country, I will lay before my readers some facts respecting it, for which I am indebted to a small work by M. Rey, on the Artesian Well at Grenelle, at Paris, which has excited so much attention there, and has not been altogether unheard of in this country.

The boring of this well was commenced by M. Mulot, on the 30th of November, 1833, under the authority and at the expense of the Municipal Council of Paris, whose object in directing the operation was to supply the city with water. The undertaking was continued for many years, apparently without success; and as the authorities refused to supply further funds, M. Mulot determined to carry on the work at his own expense, and actually expended about 40,000 francs of his own property in so doing. At length, on the 26th of February, 1844, the water came from a depth of 1681 feet, and now rises to the height of 112 feet, whence it is carried to a reservoir near the Pantheon, which supplies the quarter of the Madeleine. The cost of this well was 600,000 francs, and it supplies 250 gallons of water per minute, or 360,000 gallons per diem.

When I was last at Paris I visited this remarkable work, and tasted the water, which, when it first issues from the tube, is quite warm. I also tasted some that had been kept twenty-four hours;

it was, of course, perfectly cold, and was very pure and well-tasted. It has been found by an analysis made by MM. Payen and Pelouze, that the water of Grenelle contains in 100,000 parts the following solid substances: carbonate of lime, 6.80 ; carbonate of magnesia, 1.42 ; bicarbonate of potass, 2.96 ; sulphate of potass, 1.20 ; chloride of potass, 1.09 ; silex, 0.57 ; a yellow substance, 0.02 ; azotized organic substances, 0.24. Total, 14.30, being 0.14 per cent., or 14-1000.



THE ARTESIAN WELL OF GRENELLE.

The accompanying plate represents the external appearance of the Artesian Well of Grenelle.

The water ascends from the earth in a tube 112 feet high, and about nine inches in diameter. It issues from this tube warm and limpid. It first falls into a circular cistern, supported on a platform about ten feet square. This cistern is pierced with eighty round holes of about an inch in diameter, which are not all full, it is true, but of which sixty become full, when the other twenty are stopped up. The water on issuing from the pierced cistern—which may be compared to the sieve of the Danaides—at once enters a descending tube, equal in length and diameter to the ascending one. This tube constantly full, or, as they say at Grenelle, always charged, descends, to reach, under ground, the origin of the conduit, which distributes the water in the city. Lastly, a third tube receives, also upon the platform, the over supply of water, that is, what the supplying tube cannot itself receive for the purpose of discharging it, when the taps of the vessels for the reception of water in the city are not open.

It may, perhaps, be objected to the proposal to supply London with water by means of Artesian wells, that they would not furnish a sufficient supply, or that it would not be permanent. But as to the first objection, there need be no limit to the number of Artesian wells, for it appears that the formation of several in close proximity to one another, does not diminish the supply of water furnished by each. To the second objection, I would reply in the words of the author already quoted: “Rain being the only source of Artesian springs, we may be certain that they will never become dry so long as rain shall continue to fall, and so long as rain shall form streams which flow over the sandy or chalky soil, from which these springs derive their supplies.” In confirmation of this, M. Rey refers to several ancient Artesian wells, which have for many years yielded an undiminished quantity of water, and, among them, to the three Artesian wells of Solomon, in the plain of Tyr, spoken of by M. de Lamartine, which throw out, up to this very day, the same quantity as at their formation, and continue to be the chief sources of the supply of water to this ancient and celebrated city.

It must be added that the purest water, if conveyed by *lead* pipes, or received into *lead* cisterns, cannot possibly be wholesome; and, in fact, the purer the water the greater is the danger.* Filtering does not purify water, as it can only remove the impurities which are mechanically suspended in it, and not such as are in a state of solution. When water comes fresh into cisterns only two or three times a week, as is the case with the New

* *Vide* Mr. Phillip's evidence before the committee of the House of Commons. An instance of the injurious effects of drinking water impregnated with lead, came before the public a short time ago, in the case of the Queen's hounds at Windsor.

River water, filtering cannot much improve it, nor be successful in depriving it of its deleterious properties : we might as well attempt to remove the poison from a solution of arsenic by filtering. To prevent any injurious effects from its use internally, a *chemical process* would be necessary.

The next point to be attended to in the care of the health, is to provide an abundant supply of pure air in our dwelling-houses, shops, &c., &c. ; and as this cannot be procured unless the air of towns generally is pure, this subject will naturally lead us to the consideration of the measures which are necessary, with a view to the removal of the numerous causes of impurity in the atmosphere of large towns, and especially of manufacturing ones.

The air we breathe has a most important use in the animal economy ; by its agency the impurities of the blood are removed, and that fluid is again rendered capable of supporting life. To show the importance of this process, it will be sufficient to remind the reader, that it is the deprivation of air which causes death in drowning, strangling, and suffocation ; in fact, death invariably ensues when the admission of air to the lungs is prevented longer than three or four minutes ; and as the function of the air is performed chiefly by one of its constituents, oxygen, it follows that any diminution of the purity of the air, any addition of foreign gases, and any abstraction of oxygen, must be attended by results similar in kind, if not in degree, to those which follow the total exclusion of air. In fact, persons who constantly live in the midst of impure air, and whose blood is in consequence incompletely renovated in the lungs, are invariably enfeebled ; the various functions of the body are carried on with languor, their complexion loses its freshness, their step its elasticity, their mental faculties even become dimmed, and the whole system assumes the appearance of decrepitude.

It must be evident then that an abundant supply of fresh air is an essential condition to healthy existence, and that each one, as far as in his power lies, should neglect no means of securing it. The conduct then of those who close their doors and windows with jealous care—who sleep in bed-rooms whose windows are never opened from one year's end to another, and in which the openings of the fire-places are hermetically closed—act in a manner precisely opposite to the proper one. Every thing should be done to promote the thorough ventilation of every place in which men live or assemble : the neglect of this renders our public meetings, theatres, concert-rooms, &c., positively unhealthy, as is shown clearly enough by the flush and headache which are generally produced by attending any of them when crowded.

But it must be confessed that this is a matter over which individuals have comparatively little control, for so long as the general atmosphere of a place is contaminated, it is evident that

all the efforts of individuals cannot purify it—they may open their doors and windows as widely as they please, and walk abroad until they are tired, but they will only by so doing *change* the air they breathe without greatly improving it. For instance, in London, and in most of our large towns, the atmosphere is impregnated with and vitiated by a thousand different exhalations and fumes, which render it more capable of still further corrupting the blood than of conduced to its purification. It is nearly two hundred years ago since a similar complaint was made by the well-known John Evelyn, at a time when the evil cannot have been at all comparable in magnitude to what it now is. He tells us that in spite of the admirable situation of the metropolis in respect of health, there were numerous artificial agencies at work which deprived it of these natural advantages, and actually rendered its atmosphere unwholesome and productive of disease. These he enumerates as being the various factories and establishments which consumed large quantities of fuel, and sent forth “that dismal cloud of sea-coal which is perpetually imminent over her head, and is universally mixed with the otherwise wholesome and excellent air.”* As a remedy for these evils, he proposes a legislative measure for compelling the removal of all such establishments to some distance from town. It is much to be regretted that this proposal was neglected, for the evil has so grown upon us, that its remedy seems almost impossible, at least, by the measure which he suggested. The advance of science, however, has put other and more simple means within our power for removing or abating the nuisance in question: all that is necessary is an Act compelling all factories, breweries, gas-works, *et hoc genus omne*, to consume the smoke which they generate, and not to pollute the vital element with their refuse.

This measure I conceive to be of the utmost importance, and essential to the success of any other plans for improving the public health. Parks and other places of public resort and amusement derive the chief part of their utility from furnishing opportunities and inducements for exercise in the open air, but if that air be tainted and rendered unwholesome, this becomes an evil rather than a good.

We come now to the subject of muscular exercise—a subject of the utmost importance, and one on which highly pernicious errors are prevalent.

The construction of the muscles and the arrangement of the skeleton is such as to show in the most satisfactory manner that the duly regulated exercise of those parts of the human frame is

* Fumifugium, or the Inconveniencie of the Aer and Smoak of London dissipated: together with some Remedies humbly proposed to his sacred Majestie and to the Parliament now assembled. London, 1661.

one of the best safeguards of health, without which no very high degree of vigour can be expected in any part of the animal economy. Most of the blood vessels are imbedded in the muscles, and are consequently liable to be acted upon by them, the contraction of the muscles which takes place while they are being exercised assisting the blood vessels in propelling the circulating fluids through them ; so that exercise greatly assists the action of the heart and arteries, renders the circulation more vigorous, and thus imparts tone to the functions of the whole body. Especially is duly regulated exercise of the utmost service to the process of digestion, and one of the most efficient defences from dyspepsia. Accordingly it will be found that persons who lead sedentary lives are in most cases dyspeptic, and that in spite of all the aids that medicine can afford them : in fact the constant consumption of medicine, instead of relieving, aggravates their indisposition. Nature is not to be thus balked. She has provided man with organs of locomotion, and the whole of his frame is so intimately connected together, each part depending on and sympathising with every other part, that it is impossible for any part to be neglected and become enfeebled without injury accruing to all the rest ; nor can they be secured from this injury by extra care bestowed upon them. Those, therefore, who imagine that they can keep the digestive system in order by means of medicine, while they live sedentary inactive lives, taking no muscular exercise, but suffering the muscles to grow flaccid and to lose their vigour for want of use, are reckoning without their host.

The power of exercise in restoring to health those whose neglect of the natural laws has impaired their constitutions, is shewn in a very forcible manner by Voltaire in the following *apologue*, which cannot fail to interest my readers.

“Ogul, a voluptuary who could be managed but with difficulty by his physician, on finding himself extremely ill from indolence and intemperance, requested advice. ‘ Eat a basilisk stewed in rose-water,’ replied the physician. In vain did the slaves search for a basilisk, until they met with Zadig, who, approaching Ogul, exclaimed, ‘ Behold that which thou desirest ; but, my lord,’ continued he, ‘ it is not to be eaten ; all its virtues must enter through thy pores,—I have therefore inclosed it in a little ball, blown up and covered with a fine skin ; thou must strike this ball with all thy might, and I must strike it back again, for a considerable time, and by observing this regimen, and taking no other drink than rose-water for a few days, thou wilt see and acknowledge the effect of my art.’ The first day Ogul was out of breath, and thought he should have died from fatigue, the second he was less fatigued, and slept better ; in eight days he recovered all his strength. Zadig then said to him, ‘ There is no such

thing in nature as a basilisk! but thou hast taken exercise and been temperate, and hast therefore recovered thy health!"

It is strange that any exhortations should be needed to induce persons in health to take sufficient exercise to maintain the system in perfection. Nature has beneficently annexed an immediate reward to so doing in the pleasurable sensation experienced by man when engaged in taking muscular exercise; a pleasure not very vivid it is true, but one of the most calm and soothing that can be felt—one that spreads its influence over the mind as well as over the body, and promotes those kindly feelings, that state of peaceful repose, which is no less productive of bodily health than of mental satisfaction.

In any but a very highly civilised community this pleasure would be a sufficient inducement to take exercise; but in such a country as ours, where the artificial wants and habits of society completely pervert the natural feelings, this is not the case. On the contrary, many men seem to avoid as much as possible any muscular exertion, and to look upon the necessity for it as a great evil. Hence we see hundreds of persons who are engaged all day in sedentary occupations instead of availing themselves of every opportunity to walk, and accordingly going on foot from their residences to their places of business, getting into cabs and omnibuses—shutting themselves up in a close box with ten or twelve others, instead of inhaling the fresh air of the morning. Nothing can be more foolish than such practices—and so far from arriving at their offices fresh and vigorous, as these people suppose they will do by avoiding the walk, they get there in a state of languor any thing but adapted to enable them to get through the labours of the day with satisfaction to themselves.

Excellent as exercise is, however, it must be subjected to regulation, in order that the greatest amount of benefit may be derived from it with the least possible injury, and the following are the principal points to be attended to in this matter.

Exercise must be determined, both in time and duration, by the strength of the individual; no universal rule can be laid down respecting it; for an amount of exertion which would be proper for one person and leave no enduring sensation of fatigue, might be enough to prostrate the powers of another, and, instead of invigorating, enfeeble his whole system. We have, however, in our own feelings, an unerring guide by which we may learn when to stop, and when to continue exertion would be imprudent. This is the feeling of fatigue which always attends undue exercise. The power of the limbs, as well as of every other part of the body, is limited, and if they are forced to labour beyond their strength, the nerves belonging to them convey a feeling of pain to the sensorium, which is nature's warning to man, a warning not to be neglected without the most serious consequences. Taking this

for our guidance, there can be no danger in taking exercise, for then we shall be sure to take it at the very time, and to the very extent, which is beneficial to us.

Many persons, however, either ignorant of this fact, or paying no attention to it, seem to proceed on the principle that exercise is always beneficial ; and that the more they take, the more healthy they will become ; an error which may truly be called fatal ; for not a year passes by without some persons falling victims to it. For instance, there are, in all our large towns, hundreds of young men, who being closely confined all the year round, and neglecting the daily opportunities for moderate exercise, which few, if any, do not enjoy, have annually a brief holiday — a week or fortnight's respite from their otherwise uninterrupted labours, and many of them engage in long pedestrian excursions which occupy the whole of this time—their object being to walk as great a distance in it as their powers of endurance will permit them : they evidently suppose that the farther they walk, the greater good will their health derive: accordingly, they walk each day a distance probably as great as during the rest of the year they walk in a month—and persist in so doing, in spite of wearied limbs and swollen feet—until at length their strength utterly fails them, and they fall upon a bed of sickness, from which they often never rise again, or if they do, it is with enfeebled constitutions : whereas, had they attended to their natural feelings, and discontinued their exercise as soon as fatigue began to be felt, they might have really, during their brief vacation, have strengthened their frames and improved their health; and, by attending to this plan, they would gradually become capable of greater and greater exertion.

Another point to be attended to is, that exercise should be taken in the most open places which are readily accessible. The reason for this is that exercise increases the action of the lungs, and enlarges their capacity, so that a greater quantity of air is inhaled into them at each inspiration during the time of taking exercise. Now when the air is pure, this causes the blood to be more perfectly purified, and thus all the functions of the system proceed with greater vigour, and the entire body is strengthened —this result is in fact one of the principal advantages of exercise. But it is evident, that if the air by which we are surrounded while taking exercise, be corrupted by any means, this benefit must be wholly lost.

This shows also the absurdity of those, who, while taking a walk for the sake of exercise, continue smoking cigars during most of the time—a practice which, though always bad, is really preposterous under such circumstances, as it to a considerable extent destroys the advantages to be derived from exercise.

Another hint may be useful in reference to exercise. It is always desirable to have a companion in our walks, as cheer-

ful, lively conversation adds greatly to the benefit derived from them; but persons walking for exercise should never walk arm in arm, for by so doing they confine each other's movements, especially those of the arms, the motion of which helps to expand the chest, and to give the lungs free play.

When bad weather or ill health confine persons within doors, they should still take exercise of some sort or other, and the moderate use of the dumb-bells may be recommended for this purpose, by women as well as men.

The inhabitants of large towns labour under very serious disadvantages in this respect, and they can never wholly escape from them; but still much may be done to palliate these evils, and some progress has actually been made towards so doing.

The measures which have of late years been taken to provide open places of public resort for the inhabitants of towns are highly useful, and the crowds of persons who frequent all such places already opened, is a sufficient proof that the boon is duly appreciated. It is now several years since I first published suggestions on this subject, and it has been with great pleasure that I have observed them one by one adopted by the proper authorities. Encouraged by this success, I beg leave to submit the following hints for the further improvement of our metropolis and provincial towns.

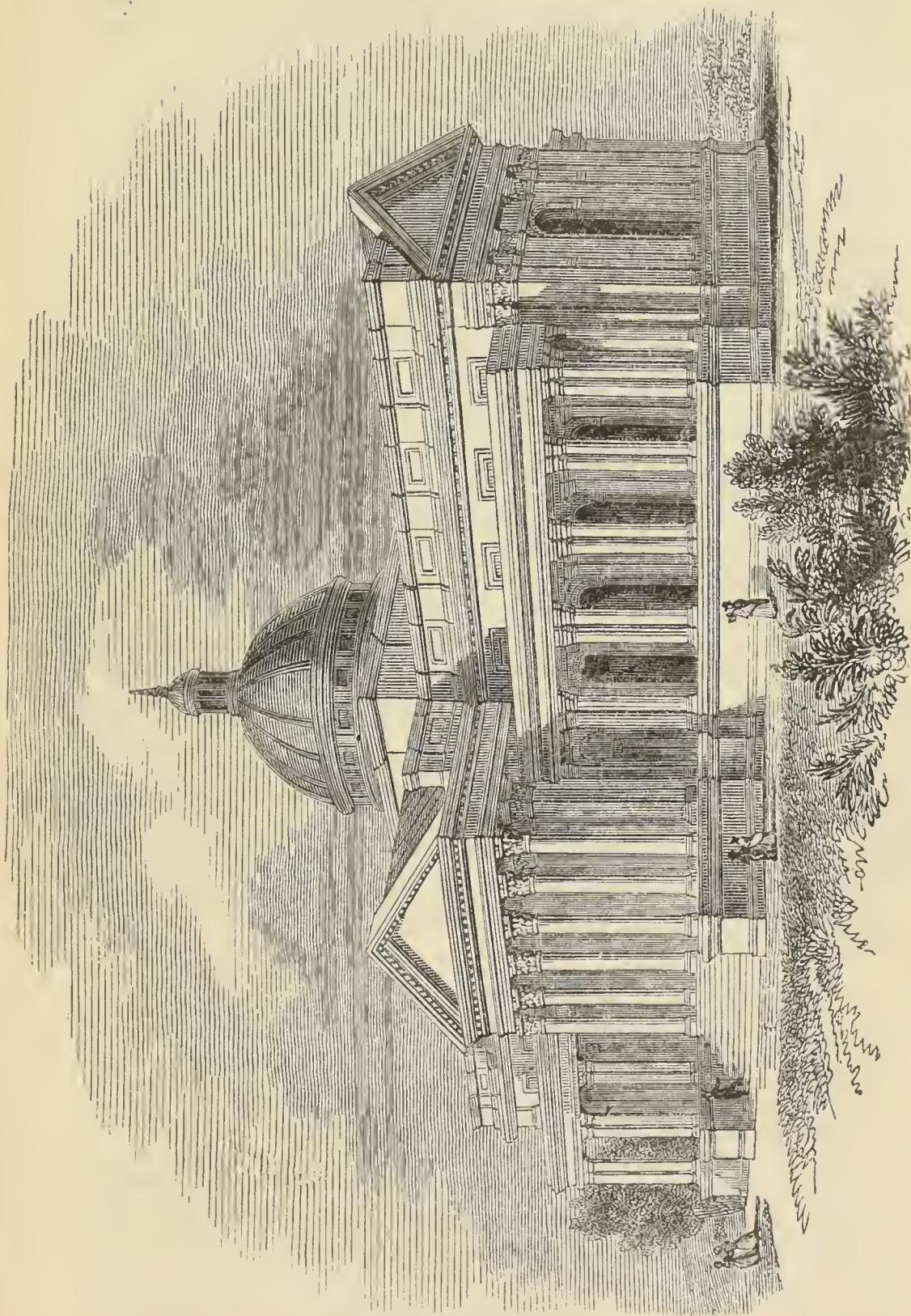
There are a great many squares in nearly every part of London, most of which have well laid out gardens in their centres—now were all these gardens opened to the public, even for a short time daily, they would afford open places for exercise extremely convenient to many who have no time to go to places more remote from their houses, and this privilege would not in any manner interfere with the enjoyment of the gardens by the inhabitants of the squares.

If casinos were erected in all the parks, where visitors could be furnished with breakfast or tea in the open air, in fine weather, the novelty of the thing would attract many, and thus induce some to leave their beds an hour or two before the usual time, and inhale the fresh morning air before it is impregnated with smoke.*

I have lately laid a plan for a casino in the Regent's park before the Commissioners of Woods and Forests; and the question has been taken up by several public journals, which admit the desirableness of such erections, so that it is probable something will be done before long.

The accompanying plate is a representation of the principal elevation of the proposed casino above mentioned.

* At the lodges to the parks, milk, and curds and whey, can be procured; and there appears to be no reason why something more substantial should not be provided, for those who desire it, in the parks themselves.



PROPOSED CASINO IN THE REGENT'S PARK.

The erection of casinos need not be any expense to the public, inasmuch as they could easily be let at rents, leaving a surplus which could be applied to the extension and improvement of the parks.

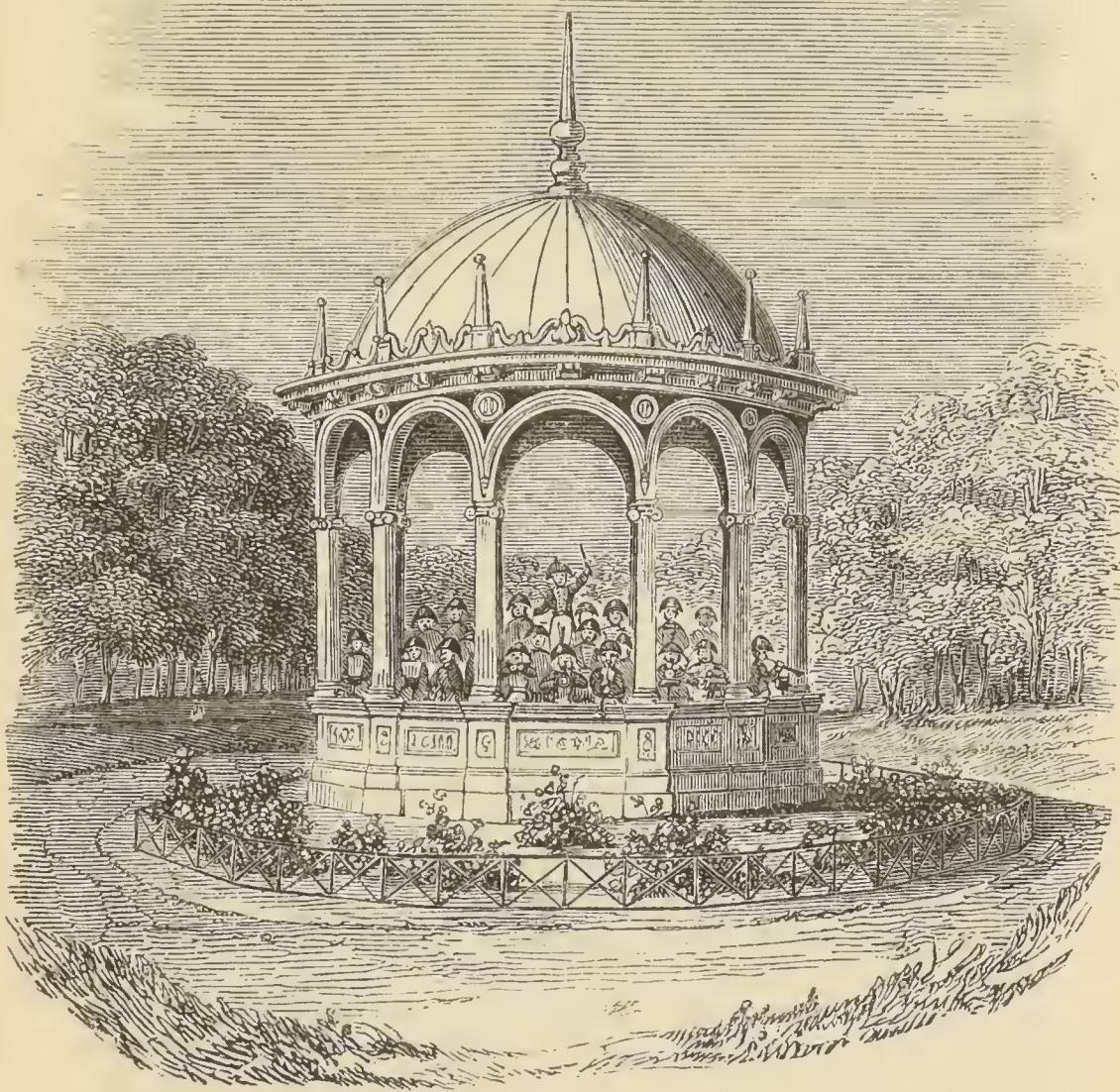
On the continent far greater attention is paid to the convenience of the public in the parks and other places of public resort than in this country—thus in the gardens of the Tuilleries I noticed a casino or café near the windows of the palace. And this leads me to mention that the gardens attached to the palace at Vienna, and, in fact, to the palaces of all the continental sovereigns, are freely open at all seasons to the public, an example which might be advantageously followed in this country.

The present government has gained much credit by showing itself on all occasions favourable to measures for promoting the establishment of parks, not only in London, but in the provinces also. Sir R. Peel, in a debate upon the subject a few years since, in the House of Commons, stated that he would have no objection to a grant of money for this purpose.

When in Belgium last year, during the Queen's visit, I was much pleased with a concert in the open air, in the park at Brussels, given by the Harmonic Society, and will briefly describe the arrangements, which seem to me to be well worthy of imitation here. The performers were stationed in an elegant building called a Kiosk, resembling a temple or pavilion, which shelters the musicians and yet presents no obstruction to the sound. This Kiosk is frequently occupied by a military band, which performs for the amusement of the visitors to the park, and is no doubt a powerful attraction. Now, were Kiosks erected in the three parks of London, and the bands of the regiments stationed in the metropolis directed to perform in them at stated times during fine weather, far greater numbers of persons would resort to the parks, which would thus become more extensively useful and health promoting.

An erection of this kind has, within the last few months, been raised at the terminus of the Blackwall railway, which, although not *quite* equal to that at Baden-Baden, is nevertheless a very pleasing object, and attracts many hundreds to hear the band which it accommodates: the fine scenery on the opposite side of the river, the fresh air, and the free open space, render this a very pleasant place for promenading.

The following is a representation of a Kiosk, the plan of which I submitted some time ago to the Commissioners of Woods and Forests, for erection in Kensington Gardens.



PROPOSED KIOSK IN KENSINGTON GARDENS.

I am glad to find that my plans are being adopted in provincial towns as well as in the metropolis. Thus, the laying out of a park at Liverpool has been begun under the superintendence of Mr. Paxton, who is similarly engaged on a park of 180 acres at Birkenhead, Cheshire, opposite to Liverpool. The Liverpool Park is the property of Richard Vaughan Yates, Esq.

Still more recently a subscription has been set on foot to form

a park at Manchester—a town where one is certainly much needed, and the inhabitants of which seem to enter with greater spirit and determination, than elsewhere, into the measures necessary for supplying the want. The subscription, I am informed by Mr. Cathrall, has already reached the sum of 25,000*l.*, to which Sir R. Peel munificently contributed 1000*l.*

I trust that in the new parks the directors will not suffer the formation of what is called “ornamental water,” which may generally be described as an ornamental nuisance — inasmuch as unless means are provided for carrying it off constantly and furnishing a fresh supply, it becomes stagnant, and is the source of unpleasant and unhealthy effluvia. Instead of this let casinos and Kiosks be erected in them, which will not only add to the beauty and convenience of the parks, but increase the income applicable to their maintenance.

In reference to this subject, I have much pleasure in quoting the following sensible remarks from a recent number of the *Medical Gazette*:

“ The advantages of parks and open spaces are by no means confined to their affording facilities for exercise and recreation; they have a more constant and wide-spreading influence upon the purification of the whole slowly-changing volumes of air. There are hundreds of places in the metropolis into which the *wind* never finds admission, in which the air is never perceptibly moved, and in which the only change it undergoes is by the gradual mixing of its impure gases with those of adjacent spaces, and of the upper strata of the atmosphere. Nay, even among the wider streets, there are many through which a free current is very rarely blown; and Londoners, or at least the majority of them, shrink before a breeze that one from the provinces or the coast would hardly notice. It is probable, therefore, that by far the greater proportion of the change of the air which is effected in the metropolis is the result of the mixture of the gases composing it. But how slow a process this is, one may easily judge by the perceptible (we had almost said the palpable) difference between the air of an alley and that of the wide street or other space into which it opens. A part of the gases generated on the ground, and near it, are indeed, by the greater heat there, soon carried to some distance above it; but that which is thus disposed of is but a small part of what is rendered impure; nor are the heavy and most noxious of the gases thus most rapidly carried off. Indeed, it is probable that by this process the change of air is, as far as it concerns the health of those who breathe it, and who constantly render it more and more impure, almost unimportant. The only effectual natural process for its purification, in the absence of the wind, is the gradual mixture of the gases in ac-

cordance with Dalton's law, that the interspaces of one are as vacua to the particles of another."

Among the measures which would prove of value in improving the sanatory condition of those who live in towns, the formation of public gymnasiums must not be omitted. It ought to be remembered that mere walking, although the most healthy exercise there is, calls into exercise only some of the muscles, while those of the upper extremities are scarcely employed at all. Hence arises that great disproportion between the size of the legs and arms of many persons whose occupations do not call for the vigorous exercise of the latter limbs, such as clerks of all kinds, shopmen, &c. &c. Such persons may exercise their legs sufficiently, and these may, in consequence, be stout and vigorous, but their arms are frequently little more than skin and bone; nor is it easy to see how it can be otherwise at present. But were gymnasiums established in various parts of our towns, under the direction of competent persons, every one would have it in his power to obtain suitable exercise for the whole body, and acquire a degree of activity which might often prove of immense service to others as well as to himself.

Public riding-schools, swimming-schools, and gymnasiums, both for adults and children, on a large scale, would be of great utility in this country, in strengthening the whole system, and giving it that degree of vigour and elasticity which is the real source of graceful movements and address, in which most continental nations so much surpass our own countrymen. When at Brussels last year, after visiting the hospitals in company with Dr. Tobin, the eminent resident physician, and Mr. J. Dan, we went to the public gymnasium, and were accommodated with the king's box. I was greatly pleased with the establishment, which might profitably be imitated in the metropolis, and other large towns. Several officers and non-commissioned officers were engaged in the exercises at the time. I was particularly struck with the arrangements in the children's gymnasium, the various exercises seeming to be carefully adapted to the strength and ability of the young people—a point, the frequent neglect of which has done much to bring gymnastics into disrepute in this country.

I also visited at Paris, a few weeks since, the Normal Gymnasium of Colonel Amoros, Place Dupleix, near the Champs Elysées, which is a very excellent establishment, though not equal to that of Brussels. I was politely shown over the establishment, which seemed to comprise every requisite for gymnastic exercises, and where I was amused by seeing some ladies practising jumping from a spring-board.

At Vienna also great attention is paid to gymnastics. Thus at the celebrated educational establishment for the sons of the

nobility, called the Theresianum, I found that there were riding and swimming-schools attached, a place for gymnastic exercises, and a fine park and gardens for the use of the scholars.

I am surprised that our public schools, such as Eton and Harrow, have no gymnasiums—for, I think, a gentleman's education can hardly be considered finished without drilling, riding, swimming, fencing, and other healthy exercises; such, at least, is the opinion in Germany. The mere habit of standing and walking erect, by expanding the lungs, and thus more completely purifying the blood, must tend greatly to invigorate the whole frame.

For the same reason it is highly desirable to promote the revival of those active out-door games in which our forefathers delighted to indulge—the game of cricket especially is one which it would be pleasing to see diffused throughout the length and breadth of our land. England might again deserve the epithet of “merry,” and her sons would once more become distinguished for their bodily prowess as well as for intellectual and commercial eminence.

It is vain, however, to point out the advantages derived from exercise, or to advocate the establishment of means whereby its blessings may be increased and rendered more easily attainable, so long as the existing evil of our age and country remains, presenting an obstacle to the physical and moral improvement of the great body of our countrymen, which must defeat all the efforts made in their behalf—I mean the excessive length of the time devoted to the purposes of business in our towns. To talk of taking exercise amid the green fields to those whose daily toil of thirteen, sixteen, or even a greater number of hours, completely exhausts all their energies, leaving them fit only to seek that repose in sleep, which their overtired bodies imperatively require, is a cruel mockery, and can but add to their misery. I regard the efforts now making with a view to shorten the hours of labour as of the utmost importance, the success of which would lay the foundation for the true happiness and prosperity of our country; and so believing, I have for a considerable period availed myself of every opportunity to advocate the measure, and to impress upon all parties concerned, that their real interests require their assent thereto.

It is custom and prejudice only which prevent some change of this sort; for, by beginning business an hour or two earlier, quite as much work would be got through as at present, even though all places of business should be closed at six o'clock in the evening, and most persons would be satisfied with leaving off business at eight o'clock in summer and seven in winter. When in Dublin, I was informed that all the banks leave off at three in the afternoon, and no complaint is made of this arrangement; nor is it easy to see how any harm can result from it.

I have lately made personal exertions to bring about this desirable improvement, having had interviews with many of the principal bankers and linendrapers ; and from the attention which I have met, and the evident readiness to do whatever is practicable, on the part of nearly all those gentlemen, I have little doubt of the general adoption of this plan ultimately, although it may be delayed for a time by the prejudices, or the supposed interests, of a few. To no class would such a boon be more beneficial than to the milliners, dressmakers, and all females engaged in shops or in needlework—a fearfully large proportion of whom fall victims to diseases induced by their sedentary occupations in close rooms and a tainted atmosphere ; and to the same circumstances is doubtless attributable the frequency of affections of the eye and ear among those classes. By universal consent the law has interfered to protect factory girls from excessive labour ; and it would be hard to show why the classes above referred to should not enjoy the same protection.

The question of shortening the hours of business and labour continues to be agitated, and a gradual change in public opinion respecting it is being brought about ; and, if the parties chiefly affected continue their efforts in the same spirit as they have hitherto manifested, there can be no doubt they will eventually accomplish their object, which must commend itself to every mind the more it is reflected on. An association has been formed for the promotion of this cause, which deserves the support of all who take an interest in the happiness of their fellow-creatures ; its motto should be "*omnia perseverantia vincit.*"

And here, although it is perhaps going somewhat out of my way, I cannot refrain from remarking that the employers themselves, as a body, have no shadow of interest in resisting the change required ; for it is perfectly evident that the total amount of business transacted would be the same whether the hour for closing places of business was six or ten o'clock : purchasers do not purchase because shops are open at a certain hour, but because they need the commodities they buy—and this need is altogether independent of the time for opening or shutting shops.

The evils of the present system have lately been set forth in a very striking manner in various ways ; and many persons who formerly kept aloof, have now lent their aid to those engaged in seeking for a change. Among them may be mentioned Dr. Copland, by whose speech at the meeting of the Drapers' Association, held in Exeter Hall, October 9, 1844, I was much gratified, and from which I have great pleasure in taking the following extract, with which I fully agree :

"There cannot be the least doubt, and it is well known to medical men, that excessive labour is the most fruitful source of

disease, which is furnished by the experience of this great metropolis. They know full well that during such exertion, however wholesome the food may be, it cannot undergo that healthy digestion and assimilation which are necessary to the perfection of all the functions of life. On the contrary, we are sure to see induced, more or less slowly, those insidious diseases which undermine the constitution, and which perpetuate themselves to the third and fourth generation. For the evil is not confined to those who are now suffering the bondage which has just been so well described ; it is transmitted to the children, and the children's children, and even to the fifth and sixth generation,—if indeed the offspring extend so far, which is rarely the case.

“ The evils that result from this state of continued bodily and physical exertion, are manifold. I believe that probably no less than three-fourths of the diseases to which human life is liable in the metropolis, actually arise from this cause. They are the most fatal and the most irremediable diseases of the lungs, more particularly consumption ; the diseases of the brain and nervous system, and diseases of the digestive organs. You have, as the consequence of disorders of the stomach, liver complaints, diseases of the lungs or heart, diseases of the kidneys ; disease, in fact, of every great and important organ in the body. At last these terminate in dropsy, and in other maladies of the most fearful nature. But there are other diseases that come in more silently, but not the less surely than the foregoing, and which contaminate the constitution of the parents and the offspring. For instance, scrofula, and the different forms of struma, as it is sometimes termed. We have, moreover, as consequences of prolonged labour, debility, sinking of the powers of life, low and nervous fevers, which again superinduce other diseases of a more or less dangerous character. In those manufacturing towns where individuals are engaged in prolonged labours in the factories, or in needlework, we find a numerous class of diseases generally termed nervous : these not only affect the individual thus occupied, but their offspring becomes also diseased.”

I am much gratified by observing that several employers, who, at the time I called upon them, seemed to have doubts respecting the utility of the plan, have now become convinced of its propriety. Among them I may mention Mr. Hitchcock and Mr. Shoolbred, the latter of whom made the following remarks at the meeting above spoken of :

“ I think it quite a right impression, which ought to be felt by the whole of the employers, that not only would they not receive any injury from the change proposed, but, if it could be at all generally adopted, a very great benefit. I also think that the public would find themselves much benefited ; and that, by adopting an earlier hour than they do at present, and making

that as much as possible by daylight, they would not only be better served, but much more civilly attended to. There is one thing also which I would rather strongly advocate, and that seems generally neglected and not thought about, and that is the very unnecessarily and unreasonably late hours on a Saturday evening."

It appears that the warehouses at Manchester close at one o'clock on Saturdays, and attempts are being made to introduce the same plan into London. It has been suggested, that if the large master-builders, and others employing many hands, could be induced to pay their men on the Friday night instead of Saturday, it would cure one of the worst evils of the present system, by removing the necessity for making Saturday night the exception to early closing.

The managers of the Drapers' Association have greatly promoted the progress of their cause, by the moderate and respectful course they have from the first pursued, and their grateful conduct towards all their supporters cannot fail to gain for them constant associations to their friends. A deputation of them, headed by their active secretary, Mr. Mayhew, waited upon me some time ago to express their thanks for my advocacy of their cause both personally and in several of my works; and I have received the thanks of many of the bankers' clerks. The milliners and dressmakers also, from many of whom I have received communications describing the deplorable state to which they are reduced by excessive toil, numerous instances of which I have observed in my practice, have forwarded to me their thanks, and propose to show their gratitude by some substantial memorial; but this I have begged to decline, considering myself amply recompensed by the expression of their gratitude.

Before I quit this topic, I may observe that a very common error is to look upon any cessation from labour as an absolute diminution of production. Now were the powers of exertion possessed by the human body or mind unlimited, this notion would certainly be correct, but such not being the case, the state of the matter is altogether changed. Frequent intervals of rest are absolutely necessary to enable men to perform their various labours, and although they may contrive to go on for a time with insufficient periods of repose, not only is their strength exhausted, but the work is done inefficiently and slowly. Hence we may see the admirable and beneficial use of a day of rest or Sabbath, returning at regular and not distant intervals; a day on which the body, being completely relieved from its usual toils, may recruit all its powers, and thus, acting upon the mind, restore it to its buoyancy and energy. Barbarous or semi-barbarous people may, perhaps, be able to dispense with such an institution, but no civilised community, in which continuous and

exhausting pursuits fill up the time of the mass of society, could long exist without it, and it is greatly to be regretted that so many inroads have of late years in this country been made upon it, and that numerous classes of artizans and others are almost wholly deprived of their day of rest, and that so many persons who still possess it, should turn it to so little account for either their mental or bodily well-being. The one day of rest in seven, if turned to the best advantage, might do much to obviate the evils above spoken of, and contribute greatly to the best interests of the whole community.

Closely connected with this subjeet is the influence of the mind upon the bodily health, before I enter upon the practical bearings of whieh, it will be useful to point out how it is that mind and body are so mutually dependent upon each other.

Now this is a consequence of the fact, that the same organ, the brain, serves to carry on the mental proeesses, and to preside over the functions of all the other organs of the body; for not one of them can be carried on without the concurrence of the brain, with whieh every part of the frame is connected by means of the nerves, which serve as the channels by whieh the nervous influence (whatever that may be) is transmitted from the brain: accordingly, when by the division of the nerves supplying any organ, it is cut off from communication with the brain, it at once becomes powerless, its funetions cease, and the whole animal economy is thrown into disorder. This remarkable fact has been ineontestibly established by numerous experiments.*

Such being the twofold office of the brain, and its force like that of every part of our system being limited, it is a necessary consequence that when the mind is by any means kept in a state of undue aetivity, all the energy of the brain must be exhausted in the performance of this one branch of its funetions, the other, that which concerns the well-being of the body, being almost wholly unperformed: espeially is this the case with the digestive funetions, whieh are the first to suffer from any mental exicitement; and this is accounted for by the fact that the brain is very intimately connected with the organs of digestion by means of a distinct system of nerves—the sympathetic—whieh seems to have for its chief, if not only, purpose, the effecting of this connexion. It is for this reason that mental exertion immediately after meals is to be avoided—it withdraws the nervous influence from the stomach where it is needed to superintend the digestive proeess, which is stopped as soon as the brain ceases to supply the nerves with its subtle power: it is for this reason that digestion, or at least assimilation or nutrition, proeeds so much more rapidly and effectually

* For a plate of the base of the brain, showing the origins of the principal nerves, with a description, see the author's work, "Advice to the Deaf," 5th edition, 1845.

during sleep than while we are awake, for the nervous influence is needed also to direct the absorbents and capillaries in their selecting and constructing functions, and the brain being, during sleep, released from its mental office, is enabled to concentrate all its powers upon the bodily processes. This explains also the premature deaths of so many ardent but ignorant men, who, devoting all their time and energy to the cultivation of their intellect, and not only keeping the mind in a state of incessant excitement, but too frequently neglecting the most obvious rules of health, soon, yet too late, discover that by such a course they have ruined their constitutions, and that the object of all their efforts has, by their own folly, been for ever put out of their reach.

To the same cause is attributable the dyspepsia, hypochondriasis, and insanity, that prevail to such a fearful extent among the eager men of business who throng our streets: wholly absorbed in their engrossing and exciting pursuits, every faculty tasked to the utmost, subject to the most fearful anxiety to-day, and to scarcely less fearful exaltation to-morrow, it is no wonder that their health should give way, their digestion fail, their strength diminish; and that bodily ailments, reacting upon the mind, already weakened by long-continued excitement, should at last revenge the body on the mind by inflicting upon it the most dreadful of scourges—insanity.

That these are evils to which men in the present day, and in our country, are peculiarly exposed, is shown by the statistical data in reference to insanity which show a decided and rapid increase of late years of those thus lamentably afflicted, and that this increase takes place chiefly among the middle classes of society is equally certain. In spite of the hardships to which the labouring classes are subjected, they comparatively escape this worst of diseases, for they are not exposed to the action of that competitive and speculative spirit which throws its baneful influence upon the class immediately above them: they may often have little or nothing to eat, but at least what they have is eaten with relish and appetite, undisturbed by any thought about the price of stocks or the foreign exchanges: they may be ill-clad and worse lodged, but the labours of the day enable them to sleep soundly on their humble beds: no visions of settling day intrude themselves to disturb their repose; they rise in the morning refreshed and invigorated, while the possessors of millions often leave their couches of down feverish with anxious thoughts that have been dimly present even when they were apparently asleep.

It may seem useless to speak of such matters with a view to amendment—I shall be told, doubtless, that such is the actual state of society that no one who engages in its affairs can avoid doing as others do, at least if he wishes to be even tolerably successful. It may be so, but at all events it is certainly right that every one

should know at what risk he engages in such a struggle: if a man deliberately comes to the conclusion that it is for his interest to enter upon a course in which he exposes to irretrievable ruin his bodily and mental health—and that for the sake of increasing his wealth or adding to his reputation; be it so—it is his own affair, and no one can be blamed but himself should his enterprise turn out unfortunate—but it is certainly the duty of every writer on health plainly and distinctly to point out the evils that result from continual undue mental excitement.

As a branch of this subject I will now say a few words upon the choice of a profession by the young, or by their friends on their behalf.

I say as a branch of this subject, because the injudicious choice of professions is a very fruitful source of the worst sort of mental excitement. Unless the natural aptitude and taste and the acquired knowledge are made the chief guides in this choice there cannot be any satisfactory result from it: the individual will be placed in a situation altogether repugnant to him, and be required to perform duties for which he must feel his incompetency: the inevitable result of which must be a continual state of anxiety and uneasiness, which will speedily undermine the health, and pave the way to mental alienation.

These truths seem to be sufficiently obvious, and have been illustrated, one would imagine, within, the experience of every parent, yet, as a general rule, the vocation of a lad is fixed upon by his relatives without any reference to his capabilities, but solely on account of some extraneous circumstances which they imagine will promote the success of their *protégé* in the path they select for him. But whatever these circumstances might do were the youth adapted to avail himself of them, they must prove utterly worthless should it turn out that he is destitute of the natural qualifications which the occupation requires: this fact then should first be ascertained, before a thing is decided upon which may so greatly influence the well-being of the individual as the choice of his profession.

Not only, however, should his mental qualities be taken into account, but his physical ones also. What can be more cruel than to send a weak, delicate boy to sea, to endure hardships and exposure that his constitution is not strong enough to support?—what more absurd than to place a stout, tall, hearty lad upon the tailor's shop-board? No—let such a profession be fixed upon as will furnish congenial employment for both mind and body, and then not only may success therein be fairly looked for, but it will prove a daily, a continual source of happiness, and consequent good health, during the whole lifetime.

It must be confessed that, great as are the evils which result from undue mental excitement, they are almost equalled by those which are the offspring of the opposite state—total inactivity of

mind, of which there are many instances in the higher ranks of society.' Those who are independent of their own exertions for subsistence, and are not placed in circumstances to call forth their energies, are extremely apt to become intellectually slothful—to lose their interest in every thing—to dread each mental effort—to fall, in short, into that indescribable state called *ennui*. Such persons, having nothing better to employ their thoughts, frequently turn them all upon themselves, minutely noting every change of bodily feeling, watching the effect of every external influence upon their sensations, and at length becoming so absorbed in such contemplations as to become conscious of those organic processes which are constantly going on in our bodies, but of which in a healthy state we are never cognisant; they, in fact, become hypochondriacs: they first fancy themselves ill, and then, by the force of thought—by the reaction of the mind upon the body—they actually become so. No class of men is more truly wretched than this: they enjoy not a moment of repose, much less of happiness—the thought that possesses them, always a painful one, intrudes itself during each minute of the day, and disturbs their sleep at night—it renders valueless all the goods of fortune and station, and makes them poor, miserable, complaining creatures, a burden to themselves and to all with whom they come in contact.

As a safeguard against such deplorable evils, let every one, no matter what his rank or fortune, find some useful employment which, while it renders him the instrument of good to others, will confer upon himself the inestimable boon of content and happiness. Surely no man nor woman need lack beneficial occupation—occupation which would call into healthful exercise all their faculties, and render them more and more capable of enjoying the blessings by which they are surrounded.

One cheering fact there certainly is in the condition of our country, one which bids fair to prove a powerful antidote to the undue mental excitement of which I have just spoken—I allude to the extension of the means for travelling from place to place by means of railroads and steamboats. Tens of thousands of persons who, twenty years ago, would never have dreamed of a country excursion beyond Richmond or Greenwich, or of being absent from their accustomed occupations longer than a day at a time, now extend their trips to the sea-coast, to the lakes, to the sister kingdoms, or to the continent, and joyfully quit their shops and counting-houses for weeks together, thereby not only becoming partakers in elevating and refining enjoyments, enlarging their knowledge and smoothing down their prejudices, but gaining a respite, brief it may be, yet for the time complete, from those harassing cares which at all other times prey upon their spirits, and destroy their health. The beneficial effects of these

excursions both on the bodily and mental condition are inaleatable—effects which are not limited to the time over which the excursions extend but continue during the whole year—the pleasures then enjoyed are a bright spot in the memory, on which the mind, when fatigued with the cares of business, loves to repose, as in a green oasis in the midst of sandy deserts, and in the contemplation of which it derives support and comfort.

Greatly, then, is it to be desired that the taste for travelling of late developed among our countrymen should be fostered, and every facility be afforded for its gratification ; and not less should whatever would tend to check it be carefully removed. Government has already recognised as its duty the supervision of railroads, and the control of all those arrangements in which the safety of the community is so deeply interested. The satisfactory results of this care are already abundantly evident in the great diminution of accidents on railroads. It is, however, manifestly absurd to exercise this care over one species of conveyance, and to leave others to the management or mismanagement of private parties, who too often consult only their own immediate interests, regardless either of the safety of those who entrust their lives and property to their care, or of their own eventual interest. On several occasions lately, it has been made known that sea-going steamboats, carrying large numbers of passengers, are frequently provided with only one or two small boats, so that in case of any accident at sea, the greater part of all on board must inevitably perish ; and more than once within the last year such a catastrophe has been prevented only by a concurrence of favourable circumstances that cannot be looked for again. Now this is evidently a matter which calls for government interference—and some such measure as that which conferred upon the Board of Trade its powers in reference to railroads, should, as early as possible, be passed, to bring all steamboats and other vessels under similar control.

One of the injurious influences that act upon the public health, and which might be, to a very considerable extent, prevented, is the adulteration of food, which is carried on to a greater extent at this time than at any former period, more particularly in bread, beer, spirits, and wine. This fact may be accounted for by the excessive competition which prevails in every branch of business, and causes tradesmen to endeavour by any means to *appear* to undersell their rivals, which, of course, can only be effected by adulterations—the eager desire to accumulate wealth also, which seems to possess so many of the middle classes, contributes to the same result ; and as there is no effective or general system for the prevention of such unprincipled conduct, it may be expected to continue and increase.

It may be said that the adulteration cannot be very injurious,

otherwise its effects would soon show themselves in a much more serious manner than is actually the case. Now it may be very true, that no deadly adulterations take place, and that a person may go on eating and drinking adulterated articles without becoming sensible of their ill effects; but when it is considered that the things most adulterated are the principal necessities of life—those which form the chief part of our subsistence, and are consumed every day of our lives—it must be evident that even a very minute degree of adulteration must act insensibly upon the system—and though the evil may be insidious, it is for that reason the more to be dreaded, as being more difficult to guard against. Besides, those who have long been accustomed to consume adulterated food, lose the power of detecting it—their senses become perverted, and can no longer distinguish between what is genuine and what is adulterated. That, however, much deep-seated and obstinate disease arises from this cause, there can be no doubt; and when we learn the ingredients used in many adulterations, the wonder is that they do not produce even more fatal effects.*

Bread is adulterated chiefly with alum, which tends to induce indigestion. Beer is much more variously and injuriously adulterated—deleterious drugs, of many kinds, are used.† Gin is adulterated by the mineral acids, and is frequently quite poisonous. Now the mode in which these practices tend to injure health may be briefly shown. The stomach has been truly called the sovereign of the body, ruling over all the other functions of the economy with despotic sway, and making its slightest affections felt in every part of the system.

It is highly necessary, therefore, that some measure should be adopted to diminish, as much as possible, the adulteration of food; and perhaps the establishment of a medical police, whose duty should be the prevention of every thing detrimental to the public

* Although it must be allowed that London is more healthy now than it has been for many years, no one can read the public papers without being struck with the vast number of sudden deaths. In the table of the mortality of the metropolis, it will be seen that, in the week ending October 5, 1844, there were 150 deaths from diseases of the brain, nerves, and senscs.

† When at Munich and Ratisbon, I was much pleased with the excellence of the Bavarian beer, which appeared to be perfectly genuine. When going down the Danube to Vienna in the steamboat, I noticed that the Austrian nobility on board drank nothing but this beer; and Dr. Verity, physician to the British Embassy at Paris, who was on board at the same time in charge of the Princess —, on her journey from Paris to Vienna, recommended the beer to me in preference to the wine of the country. I cannot but think that a company for the brewing of such beer would meet with great success here, since there is no doubt our countrymen are very partial to malt liquors, and with reason, for they are, when genuine, among the most wholesome of beverages.

health, would be one of the most efficacious. It is strange that England should be the only country in Europe where such an institution is unknown, and where, consequently, we are exposed to constant danger from the adulteration of food, the vending of unwholesome meat, the sale of quack medicines, &c.—evils which our continental neighbours in a great measure guard against.

Another fruitful source of disease in the metropolis, and other large towns, is the defective manner in which their streets are cleansed, and the want of sewers in many places. Refuse of all kinds is allowed to accumulate before the doors and under the windows of the houses, and acted upon by moisture and heat, it sends forth clouds of miasmatic vapour, carrying fever and death into the crowded habitations of the poor. The evidence collected by the Poor Law Commissioners, discloses numerous instances of the most deplorable results proceeding from the shameful neglect of this all-important matter of public cleanliness—whole districts of London ravaged by typhus fever and other contagious diseases, from one year's end to the other—decimating the population, and prostrating the strength and energies of those whose lives are spared. And even in the more favoured parts of the metropolis, those inhabited by the higher classes, who are made to pay heavy rates for cleansing the streets, as it called, the matter is not much better. The following is a faithful account of what usually takes place in all but the leading lines of thoroughfare:—About once a week, or fortnight perhaps, at the end of which the streets are thickly coated with mud—a villainous compound of all sorts of filth—or with dry dust, as the case may be; one or two scavengers, armed with shovel and broom, make their appearance, and leisurely commence operations, which consist in removing a small portion of the dirt to one side of the road, this done they depart, leaving the noisome accumulation for a day or two, to be again spread abroad by the traffic of the street; then comes a cart, attended by the said worthies, who deposit therein what remains piled up. The street is then said to be cleansed, and is left until the end of another week or fortnight! Nothing can be worse managed than this affair of street cleansing, and it will continue to be so until the management is completely taken away from the local boards of irresponsible commissioners, who possess neither the knowledge, nor the qualifications of any sort, for the due exercise of the important trust committed to them, and handed over to some central and responsible body.

A machine was invented some time ago by Mr. Whitworth, of Manchester, for the more expeditious and thorough cleansing of the streets, consisting of a cart, drawn by a single horse, which is said to do the work of twenty men. This machine was intro-

duced into some parts of London, but being intrusted to the management of the old contractors and their servants, whose "vested interests" were threatened by this innovation, it has, as might have been expected, been found not to answer, and seems to be now discarded. It suggests, however, very strange thoughts about our way of managing these matters, that the success of so useful a measure should be allowed to depend upon such persons.

Paris was formerly notorious for the filthy condition of its streets, but of late, by means of the care of King Louis Philippe —to whom the Parisians are much indebted for this among many other improvements—it has been redeemed from this disgrace, and now surpasses London in cleanliness; its principal streets are regularly cleansed once a day, and care is taken to prevent all collections of unhealthy substances. Still, it must be confessed, that in the low parts of the city, there are many places extremely dirty, more so even than the Cowgate at Edinburgh, but this seems owing chiefly to the inhabitants themselves.

Another suggestion I would make is, that the provisions of the Police Act, which require all householders to see that the pavement before their houses should be cleansed every morning when necessary, ought to be strictly enforced; they are almost wholly neglected, and no one ever seems to think about enforcing them. Now orders should be given to the police to call upon every householder to comply with the law in this matter, and on default to summon him before the proper officer; thus would a vast convenience and comfort be conferred upon the whole community, at the expense of a slight trouble to each.

Connected with the cleansing of the streets is the public and private sewerage, another branch of the means for securing cleanliness. Many parts of the metropolis, and still more so of our manufacturing towns, are still wholly unprovided with sewers—a fact, the bare mention of which is sufficient to show what a dreadfully unhealthy state such places must be in—the houses in them cannot possibly ever have perfectly pure air—the atmosphere must always be defiled by decayed vegetable and animal particles—the sources of fever and ague in their most terrible form. No wonder that the denizens of such districts should be weak and puny, short-lived, and incapable of resisting the attacks of disease—the wonder would be were it otherwise.

Even where there are sewers they are often very badly constructed, and accomplish their purposes very incompletely; and until these defects are removed, it is in vain to hope for a satisfactory sanitary condition in our towns. The evil here, as in that of street cleansing, is chiefly attributable to the fact that sewers are under local not central management, and that until recently there was nothing to compel builders and landlords to construct sewers to every house they built; that is now no longer the case, and in

the new parts of our towns, some of the worst of these evils will be prevented.

Interments in towns is another source of disease arising from similar causes ; the corruption of the air by the presence of decayed animal matter. Besides this grave evil, the custom is attended with many most disgusting concomitants. This evil has been considerably diminished by the establishment of the various cemeteries, but will not be completely eradicated until it is positively forbidden to bury within the precincts of towns.

The report on the practice of interments in towns, presented to both Houses of Parliament, contains a mass of evidence which discloses the most fearful evils resulting from this cause, and fully bears out the conclusion at which the report arrives, viz. : “ That the emanations from human remains are of a nature to produce fatal disease, and to depress the general health of whoever is exposed to them ; and that interments in the vaults of churches, or in the graveyards surrounded by inhabited houses, contribute to the mass of atmospheric and other impurities, by which the general health, and average duration of life of the inhabitants, is diminished.”

In the above-mentioned report a case is related of a gentleman who had gone to a dissenting chapel, where the principal part of the hearers, as they died, were buried in the ground, or vaults underneath ; and on going up the steps to the chapel he felt a rush of foul air issuing from the grated openings existing on each side of the steps ; the effect upon him was instantaneous ; it produced a feeling of sinking, with nausea, and so great debility, that he could scarcely get into the chapel. He remained a short time, but finding this feeling increase, he went out, returned home, was obliged to go to bed, and there he remained, being attacked by a malignant fever. He had, up to the time of the physician ascertaining the origin of his complaint, slept with his wife. He died eight days afterwards. His wife caught the disease, and died in eight days also, having experienced the same symptoms.

Another point in reference to burying-grounds in towns, is the effect they produce on the springs of water in their neighbourhood. Professor Brande states that he has frequently found the well-water of London contaminated by organic matters and ammoniacal salts ; and refers to an instance of one well near a churchyard, the water of which had not only acquired odour, but colour from the soil ; and he mentions other instances of which he has heard, as justifying the opinion that the numerous wells which are adjacent to churchyards must be polluted, as the accumulating soil has been so heaped up by the succession of dead bodies and coffins and the products of their decomposition, as to form a filtering apparatus, by which all superficial springs must of course be more or less affected.

It is a remarkable fact that perhaps the majority of the old pumps in London are quite close to churchyards, and even the excellent new one in Piccadilly is placed in a similar situation.

Now there can be no doubt that to drink such tainted water would be likely to produce the most dangerous disease, and steps should be at once taken to abate this serious evil. It is stated in the report above referred to, that "in consequence of various investigations in France, a law was passed prohibiting the opening of wells within 100 metres of any place of burial; but this distance is now stated to be insufficient for deep wells, which have been found on examination to be polluted at a distance of from 150 to 200 metres. In some parts of Germany, the opening of wells nearer than 300 feet has been prohibited."

It is plain, therefore, that although London is by nature furnished with a most abundant supply of the finest water, there are suffered to exist so many artificial sources of corruption that it can rarely be procured in its natural state; and every one should take great care that he does not drink water contaminated by any of the means above described: and this hint especially applies to those who make water their only beverage.

I may here mention that the metropolis is abundantly furnished with mineral springs also—some of which are quite equal to the most famous spas on the continent: they were at one time equally frequented, but the mutations of fashion have now deprived them of their celebrity.*

It may be useful to some of my readers to be informed that recent discoveries in chemistry, have enabled excellent substitutes for the principal mineral waters of the continent to be made, so that there is now no necessity to travel abroad merely for the purpose of drinking those waters. I allude to the German Spa at Brighton, the artificial waters made at which are nearly equal to those fresh drawn from the wells, and which are sold by the agent, Mr. Waugh, of Regent-street. A still greater improvement are the powders prepared and sold by Messrs. Gifford and Linder, chemists, of the Strand, which being founded on the best analyses of the mineral waters, enable every one to drink excellent substitutes for the real ones, at their own houses; and as the thermal waters cannot be imported, yet may be imitated by the aid of these powders, they afford the only means by which persons staying at home in any part of the world can enjoy the benefits derivable from the use of the warm springs of the continent.

I have thus rapidly glanced at some of the more prominent topics connected with public cleanliness, neglect of which has, in all ages and countries, been the cause of fearful calamities; nor

* For an account of all these springs, most of which I have personally examined, vide the last edition of my work on "Simplicity of Living."

can we tell how soon we may be visited by some scourge, as appalling as the plague or the cholera : there are causes at work, which under an unfavourable combination of circumstances, might lead to such a catastrophe. The cholera, by irresistibly calling attention to these matters, really did good service by inducing greater cleanliness than had ever before been practised ; but surely it would be the height of madness to wait till the appearance of such another scourge, before we set ourselves to remedy evils, so notorious and obvious as those on which I have thus briefly touched.

It is commonly supposed that the present condition of London is so much superior to what it was two hundred years ago, that we have no reason whatever to apprehend any such dreadful visitation as the plague, which devastated the metropolis in the reign of Charles II. ; and, no doubt, many improvements have been effected since that time, which would diminish the intensity of any contagious or infectious epidemic which may break out among us ; but it must be remembered that other changes have taken place, which, to some extent, must counteract the advantages we enjoy over our ancestors. For instance, the metropolis is now vastly increased in size, being, probably, six times larger than it was two hundred years ago, and, consequently, the agencies at work to deteriorate the air are far more powerful, and act upon a more extensive scale : from the same cause a very large proportion of the population of the metropolis is prevented from ever breathing really pure air ; their dwellings are encompassed on every side by the vast city, which stretches out mile beyond mile around them—forming a wall, as it were, which prevents the access of the untainted atmosphere—and the daily occupations of the mass of the people preclude them from journeying beyond the confines of the overgrown accumulation of human habitations. There is reason to believe, also, that the poorer classes live in a much more crowded manner than at any former period,* and certainly in other respects, such as food and clothing, they are little better off now than their predecessors were ; the parts of the town where they are chiefly congregated, also, are really in nearly as defective a state for cleanliness and sewerage as London generally in the seventeenth century : so that, after all, we have no very good ground for congratulating ourselves on having removed the causes to which the fearful calamities of other times were attributable.

The appearance of the cholera in this country a few years ago,

* Mr. Aird, the churchwarden of my own parish, has informed me that in a court in St. Ann's there is a house which generally accommodates from forty to sixty persons, several beds being in each room ; there are six small rooms and two underground kitchens. I understand that the poor live in a much more crowded manner even than this in Bethnal-green, Whitechapel, and the lower parts of Westminster.

shows plainly enough the unsound sanatory condition in which we are—I say *are*, for although acting under the stimulus of the dread excited by that disease, many improvements were at once effected—most of them were of a temporary nature only—few permanent reforms were made, and the cause for vigilance and care being for a time removed, the people generally have relapsed to their old habits. Another proof of this is the existence, from year to year, at all seasons, of malignant fever in many unhealthy parts of the metropolis and other large towns,* fever which the concurrence of unfavourable circumstances, such as an unhealthy season, scarcity of food, &c., &c., may spread from its usual habitat to other parts of the town, which are now considered safe from its intrusion, and may be converted into a fever of a much more fatal character than that which it commonly bears.†

It is on these grounds that I insist upon the necessity for vigorous measures being adopted without loss of time to remove the unhealthy influences now at work in this country, and thus prevent the occurrence of such dreadful calamities. Meanwhile, as we know not how soon such evils may come upon us, like a thief in the night, it may be useful to make a few suggestions relative to the proper course to be pursued in so sad an event.

When I first entered the public service, in 1805, I was sent to the prison-hospital of Stapleton, in which was a large number of French prisoners; and, at this time, a fever broke out among them. As soon as this took place, tents were set up, and the patients were removed into them, for the twofold purpose of secluding them from the other patients, and of providing them with an abundant supply of pure air; and this plan was found to answer exceedingly well. Now, should fever or cholera, become very prevalent in London, I think some similar plan would be much preferable to filling the hospitals, many of which are in close situations, with the sick: let tents and marquees be furnished by the Board of Ordnance, which, as I can testify, is always ready to

* It appears from the Table published by authority of the Registrar-General, that the total number of deaths in the metropolis in the week ending Saturday, November 9, 1844, was 989, of which 214, or more than one-fifth, were occasioned by epidemic, endemic, and contagious diseases.

† M. Dupnytren observes, that infection is the contamination of the air by persons confined in low, close, ill ventilated, and dirty situations, and by vegetable and animal substances undergoing decomposition, the emanations with which the air is thereby charged acting on man as poisonous agents. The sources of these emanations are active in proportion to the grade of atmospheric humidity and temperature, and the nature and quantity of the miasms which the air contains. Contagion, on the other hand, he considers to be in many respects independent of atmospheric conditions, and a species of germ or virus developed in the bodies of the sick, or forming an atmosphere around them, containing the principle of the malady; and through the medium of this germ, virus, or morbid principle, the malady is transmitted to the healthy.

assist any benevolent purpose by the loan of whatever is under its control, and pitched in open elevated spots in the neighbourhood of London, such as Hampstead Heath, Blackheath, &c.; let the fever or cholera, patients be removed at once into them, and there attended by a sufficient number of medical men, whose whole time should be devoted to this duty. I feel assured that the fatality of any epidemic would be greatly diminished by this means, and that its progress would be arrested.

Another thing which was done at Stapleton was to fumigate the hospital and the clothes of the sick on the plan proposed by Dr. Carmichael Smith, viz.: with sulphuric acid and nitre, which effectually removed all the unhealthy air and particles which might have adhered to them. This fumigation should be performed upon all the houses in which any cases of such an epidemic as I am now referring to might have occurred. Thus any danger of other persons becoming infected would be avoided.

In Dr. Smith's mode of fumigation, equal parts of both substances are found to be the best proportions, and it has been estimated, that half an ounce of each will suffice to disinfect an apartment of ten feet square: in applying the process to larger rooms, the number of vessels employed should be increased rather than put a larger quantity into a single vessel, as the red flames disengaged might seriously inconvenience the operator. The places fumigated should be shut up for an hour or two, and then opened. Of late, chloride of lime has been employed with great success as a disinfecting agent.

This country has happily been free for so long a time from the plague, that most people seem to think it impossible that it should ever return; but that this is absurd, the considerations above suggested will suffice to show; and although the outline of the history of the great plague of London is generally known, it may not be altogether useless to recapitulate the leading facts relative to it, in order to impress upon my readers more forcibly the vast importance of due attention to those measures of precaution which may suffice to guard us from the inroads of so destructive a calamity.

De Foe, in his "Memoirs of the Plague," states, that in the latter end of November, or the beginning of December, 1664, two men, said to be Frenchmen, died of the plague at the upper end of Drury-lane, and another man in the same house, in the last week of December. It then spread into the parishes of St. Giles's and St. Andrew's, and some others adjoining, and in the week ending January 24th, the deaths from the plague were 474. As the summer advanced, the disease extended its ravages still more widely, and entered the city, and was at its height about the beginning of September, when more than 12,000 died in one week. From that time the violence of the plague abated, and by the mid-

die of the next year, it was quite gone ; having, it is estimated, carried off about 100,000 persons.

This dreadful scourge was variously accounted for at the time : some said that it was imported into this country from Holland, where it had raged the previous year ; others said it was brought from Turkey ; but it is manifest, that the cause of its destructive-ness was the extremely bad sanatory condition of the metropolis and its inhabitants : even granting that it was conveyed hither by any such means, it cannot be supposed that it would have been so malignant, had not the circumstances of London been favourable to its propagation ; and consequently, the improvement of the metropolis must be the best safeguard against any such calamity in future.

The measures adopted for arresting its progress were as various as the conjectures concerning its origin, and few of them seem to have been adapted for the purpose. One was to close all infected houses, and strictly to prohibit their inmates from leaving them : a plan which was justly condemned by many at the time, and was certainly calculated to, and no doubt did, greatly aggravate the evil. Another plan was burning large bonfires in the middle of the streets for the purpose of purifying the air ; but so long as there was no efficient provision for sewerage and cleaning the streets, such measures must have been altogether ineffectual.

The removal of the sick immediately into the country, to some place where they might be efficiently attended to, and their isolation from the healthy, would have been much more effectual in arresting its progress, and should be done in case of any such disease again visiting this country.

Other plans acted upon were of a better kind, and may be described in the words of Dr. Russell : "The visitation of the dwellings of the meaner sort of the inhabitants, and where they are found stifled up too close, the sending of some into better lodgings, and making proper provisions for keeping them all clean and sweet ; the washing and cleansing of the streets, the removal of all nuisances, the prohibiting common beggars, &c., &c., are cautions common from time immemorial in all countries, and were repeated in the old orders for health by the mayor and aldermen in 1603."*

Personal cleanliness is essential not only to comfort and to the full enjoyment of life, but also to health : the want of it entails many evils, and renders liable to various diseases, and it will be useful therefore to explain the *rationale* of these facts.

* For ample information on the history of the Plague, its supposed causes, and the proper means to be adopted in reference to it, vide the works of Drs. Hodges, Quiney, Mead, Russell, and Sir A. B. Faulkner, and the famous work of De Foe above referred to.

The principal function of the skin, is that known by the name of perspiration, which consists in the elimination from the blood of the more fluid parts, which have become no longer capable of supporting life, the removal of which is essential to the preservation of health, which depends so greatly upon the blood being kept in a state of purity. Now the skin accomplishes this office through the agency of innumerable capillaries, which are diffused throughout its substance, and which indeed form the greater part of that substance; these capillaries communicate with exceedingly small orifices in the outer surface of the skin, called pores, through which the matter eliminated is discharged. This matter, although chiefly fluid, and consequently speedily evaporated by the action of the air, contains a variable proportion of solid substances, which, not being evaporated, are left upon the skin; and this is the principal cause of the necessity for frequent ablution over the whole body, for this solid residuum being suffered to accumulate, closes the pores of the skin, and greatly interferes with the process of perspiration, preventing the thorough purification of the blood, and injuring the lungs in the manner now to be explained.

It is one of the numerous beautiful arrangements by which animal life is sustained, that when one organ is for a time disabled and incapable of performing its functions, one or more analogous organs undertake its duties, and thus to some extent obviate the dangers that would otherwise result; but this of course must always be more or less injurious to those organs, for the power of each being exactly adapted to its functions, they are in such cases overtaxed, and unless speedily relieved of the additional labour, are weakened and rendered liable to derangement. Now the lungs and kidneys, as well as the skin, are depurating organs, so that when by any means the latter is hindered from performing its functions, they are performed by the two former—for otherwise life could not long be sustained. The lungs seem to do the greater part of this extra labour, and the symptoms which then appear are those of a common cold; which, indeed, is nothing else than the effect produced by a sudden contraction of the cutaneous capillaries and pores.

Those then who neglect personal cleanliness by permanently overtaking the lungs, produce effects upon it similar in kind though not to so great a degree as those experienced from colds—and these effects, being also permanent, cannot but act most injuriously upon those delicate and all-important organs: there can be little doubt indeed that the extreme prevalence of consumption in this country, especially among females, may be partly attributed to the neglect of personal cleanliness.

Nothing can be more absurd than the common notion that washing the face and hands, and now and then the feet, constitutes

cleanly persons—the function of perspiration belongs to the whole surface of the body, and is carried on much more vigorously in some other parts of the skin than those just named : it is manifest, therefore, that if we would escape the evils above pointed out we must not be content with such partial ablutions, but extend them to the whole body.

It is true that the face, hands, and feet, being more exposed to have foreign substances deposited upon them, than the parts of the body which are covered with the clothing, need more *frequent* ablution—but this is a thing of degree not of kind.

Many people who bathe in the summer, discontinue the practice in winter, on the ground that to do so in tepid or warm water, would be to expose them to catch violent colds on coming out into the air: but this apprehension is quite unfounded. The Russian bathes in hot water, and rushes out of the bath to roll himself naked in the snow, and catches no cold ; and surely there can be no danger in bathing in warm water, and then going out into even the frosty air of our climate well clad—especially if the person immediately begins to walk rapidly—which should always be done. Besides, as it is quite true that such frequent bathing is not required in winter as in summer, inasmuch as the perspiration of the skin is considerably diminished, a bath could easily be taken at a time when the weather was not very severe—for in England it rarely happens that the thermometer is below freezing point for more than a week together.

The best time for bathing is before breakfast, as it interferes with digestion after a meal. Sea bathing is the most invigorating, but those who are unaccustomed to it should take a tepid bath previously to going into the sea. Shower baths ought to be used with great caution.

Although hitherto this matter has been too much neglected by all ranks of our countrymen, it has been so to a deplorable extent by the working classes—nor are they alone to be blamed for this evil. Until very recently, no accommodation for bathing has been provided for them ; and, considering the crowded manner in which they live, it must be evident that personal cleanliness could never be efficiently attended to in their own dwellings. And even the baths erected of late years have been far too expensive for general or frequent use by them. It is, therefore, with sincere pleasure that I observe the efforts now making for the establishment of baths and washing-houses for the working classes, on a far more extended and economical plan than any previously promulgated ; the beneficial effects of this measure in every way, physical, moral, and intellectual, are really incalculable. At a meeting, for the promotion of this object, held some weeks ago at the Mansion House, the late Lord Mayor in the chair, the Bishop of London in proposing the first resolution, strenuously

supported the measure, and observed that, "As to public baths he had already read to them the testimony of the report on the Edinburgh prison, in which it was stated there was a strong feeling abroad of the want as well as the importance of such institutions. He would not in the presence, as he conceived himself to be, of members of the medical profession speak of the benefit that must result to the poor, and also to the rich, from the frequent use of the bath; and he would observe that one undoubted fact in pathology was, that frequent ablutions, and the removal of whatever interfered with the natural perspiration of the body was extremely conducive to health. But more than this—whatever tended to secure health to the working classes of course contributed in many ways to their comfort; but most manifestly to their strength and capacity of continued exertions. He lately, while in the north of England, took an opportunity of visiting the town of Liverpool, for the purpose of inspecting the public baths and wash-houses that had there been established for two years. He would state a few details, and he begged to say he now spoke of the advantages of bathing. He found that as many as 220 labourers had bathed on a Saturday afternoon at the public baths at Liverpool, where, he should just observe, the baths were rather on a contracted scale, there being eighty separate baths only. In conversing with the superintendent of those baths, that person told him that he had overheard this remark from one of the labouring men. Addressing a companion by his Christian name, the man said, 'I feel as if I could do another week's work now I have been in the bath.' Suppose this to take place on a Saturday, the meeting would be pleased to remember that the effects of the bath would not be confined to the sensation of physical capacity in the man, who would also be more fit, and probably more disposed, to a due observance of the sabbath."

His lordship next adverted to the argument derived from the crowded manner in which the poor live, mentioning the fact that in the parish of St. George, Hanover-square, the wealthiest in the kingdom, there were nine hundred and twenty-nine families who had only one room each in which to reside. He also stated that in a parish of London, of which he was clergyman, he found in one house of sixteen rooms, sixteen families residing, the aggregate number being sixty-four human beings. This crowded state of the population was dreadful, but rendered still worse by the poor inmates having to perform their washing in their confined rooms.

Having in my work on the "Preservation of Health," published in 1837, strongly advocated the establishment of public baths, I am truly glad to see that my recommendations are at length about to be acted upon; and that even in Edinburgh,

once famed for want of cleanliness, a strong sense of the necessity for reform has sprung up, and that among the working classes themselves, who have formed themselves into a society for the accomplishment of this purpose; in reference to whose proceedings I find the following excellent remarks in the *Scotsman* of recent date:

“ We entitle this a moral movement, and we look upon it as eminently such. It were a symptom of decided advance in refinement that the bath is desired by the operative as a mere luxury. It is not the resort of the coarsely sensual—it is not their want. The drunkards of the pot-house are filthy, and contented in their filth. But the bath is entitled to be viewed in a much higher light than as a luxury. It is the cause, and effect too, of habits of personal cleanliness, which are only found allied with the self-respect of improved temperance, intelligence, and morality. It implies not merely the purity of the person, but of the clothing; for it would be an absurdity to use the baths and resume foul garments. It implies the purity of the dwelling; for clean person and clothing cannot exist in a dirty, ill-ventilated house. It implies the cleanliness, and consequent general comfort, of wife and children; for the cleanly cannot live under the same roof with the filthy. It implies the tidiness and comfort of the home, the best guarantee against the ale-house. It implies the purity of the locality; for the cleanly in person, family, and dwelling, cannot endure a dirty door-way, or court, or lane, or street. It implies, in short, a general good sense and respectability, which demonstrate an advance in the whole tone of the character. Now, when we consider the lamentable shortcoming in all these particulars which has long characterised the masses of our people, the deplorable neglect of cleanliness in person, clothing, dwelling, and neighbourhood, which has degraded them; that, above all, pestilence, the scourge which arises out of filth, and punishes all such violations of the laws of health, is stalking abroad, and every day widening its contagious ravages, is it not indeed a moral movement, when the humbler classes, not waiting to be purified by Act of Parliament, are beginning the good work among themselves, and offering incalculably to facilitate the legislative and municipal exertions which are now imperatively called for, and which in Edinburgh, and we hope by its example in other places, will be conceded to the wishes, not forced upon the indifference or unwillingness of the people?”

I would suggest that a competent superintendent should be appointed to manage all public baths;—who ought to have the necessary knowledge for regulating their temperature, &c.; for preventing persons not in a fit state from entering; for giving advice to bathers as to the proper times for bathing, and the length of time during which they should remain in: for all these are points

of great importance, and neglect of them often occasions considerable mischief.

As concerns the middle and higher classes, it has often struck me with astonishment, that in spite of the increase of wealth and luxury, of the greater splendour and extent of the houses now erected in this country, the addition of a bath-room to every respectable house has not become universal. I am aware that in many of the mansions lately built in the neighbourhood of Hyde Park, this has been done; but I can see no reason why it should be confined to houses which let at rents varying from 300*l.* to 1000*l.* per annum: much smaller dwellings than these might surely have bath-rooms also; and were this plan to become general in new houses, the owners of old ones would soon find themselves compelled to improve their property in a similar way—and nothing would more effectually promote habits of cleanliness than this alteration in domestic architecture.

It is a question often mooted, whether marriage is favourable to health and longevity; and although no universal answer can be given to this question, yet in the great majority of instances it must doubtless be in the affirmative. Marriage is the natural condition for man, and as the more closely we adhere to nature, the more likely we are to enjoy health and happiness, it might, *à priori*, be inferred that marriage would exert a beneficial influence. Still it must not be concealed that very many marriages are calculated to promote neither happiness nor health—and errors are daily committed in reference to this matter, which are attended with most deplorable consequences. The chief of these is marrying at too early an age—an error which in most cases is injurious in every way to the parties concerned. The age of twenty-five for men and twenty-one for women is as early as prudence would permit marriage to be contracted; and were this rule adhered to, the amount of happiness in the married state would be greatly augmented.

In concluding the division of my work which relates to maturity, I cannot refrain from adverting to a subject which though perhaps not obviously is really closely connected with that of health—I mean *war*—war, the greatest curse of the human race from the earliest up to the present time—war which though doubtless incidentally and remotely often the cause of good, according to that beautiful law of compensation which prevails throughout human affairs, is yet always in its immediate influence destructive of all that constitutes the happiness and true dignity of our nature. Especially is it productive of the most injurious effects upon health—not merely upon the health of those who are actually engaged in warfare, but also upon that of all who come

within the sphere of its action. Our country has long been happily exempt from the scourge of war, and we therefore have a less vivid impression of its evils than those whose countries have been devastated by it—laid waste by famine and pestilence—the health of their inhabitants undermined by privations of every sort, and by the gloomy anxieties that necessarily attend the waging of war near their dwellings.

I have myself seen more than most persons of the miseries occasioned by war, as I was employed at Haslar Hospital, as a medical officer, during the busiest period of the last war, when the hospital was generally filled with the sick and wounded, brought home from various parts of the world ; after the battle of Trafalgar, the siege of Walcheren, and the battle of Corunna.*

It is greatly to be desired that more correct and distinct ideas upon this subject were entertained, so that the blind and ignorant desire for war, felt and expressed by so many both in our own and in other countries, might be repressed and replaced by more benevolent and rational views. Those men, moreover, who exert themselves to maintain peace—who follow truth and reason in spite of opposition and obloquy—who risk power and place rather than desert their pure and lofty principles, are deserving of the respect and love of all men.

In the present day, nothing can be accomplished single-handed—all great public measures depend for their support and promotion upon associations, which, acting as one body, are of course more capable of influencing public opinion and producing changes than any single person, however influential. Accordingly, feeling convinced that the numerous improvements required in our public arrangements, would be much facilitated and accelerated by a Sanatory Society, having for its object the protection of the public health, by promoting every species of improvement, and by endeavouring to remove all ascertained noxious influences, I have for some time been engaged in establishing such an association, and have already obtained promises of co-operation from various influential persons. It is to be composed of noblemen, gentlemen, Members of Parliament, scientific and professional persons, and, generally, of all who are alive to the importance of adopting such measures.

* The hospital at Haslar is one of the largest in the world, and is admirably situated. The internal arrangements also are excellent ; and the success with which the treatment adopted was attended, reflected the greatest credit on the commissioners ; one instance of which I may be permitted to mention. Two hundred of the troops from Corunna were admitted in the space of twenty-four hours, many of them in a dying state, labouring under pneumonia, dysentery, and epidemic fevers ; and of these patients the greater number were able to join the ranks and fit for duty in the short space of a fortnight.

The principal object of the society will be to diffuse knowledge upon these vital subjects throughout the country, and to recommend to the legislature and the public the adoption of measures for purifying the atmosphere of our towns; for providing an abundant supply of pure water; for preventing the adulteration of food, &c.; for improved sewerage and cleanliness in our streets, meat-markets, and slaughter-houses; for preventing interments in cities and large towns; for the establishment of public baths; for providing more numerous and attractive places of resort and amusement in the open air; for diminishing the hours of indoor employment, for both males and females; and, generally, for whatever is advocated in my various works as tending to increase the health and comfort of our densely populated cities and towns.

It is only by such measures as these, that we can secure freedom from wide-spread epidemics; at present it is impossible to be certain that we may not at any time become the victims of some scourge as devastating as the plague or the cholera.

In the event of any such calamity, it would be the duty of the Sanatory Society to diffuse, as quickly as possible, information on the best means for arresting its progress, and for combatting its ravages; and those who recollect, as well as I do, the indecision and uncertainty which prevailed during the time of the cholera as to the proper steps to be pursued,* will acknowledge the vast benefit that would thus be conferred upon the community, as it must be remembered that decisive measures at once, and systematically acted upon, would often destroy an epidemic in its germs, as it were; but being suffered to proceed without resistance for a few days, it becomes too strong to be successfully opposed.

We have now reached the last division of our subject—the care of the health in old age—a branch of it which may be briefly dismissed with a few general directions on the leading points.

In many respects the aged resemble the young—both are feeble—in both the principle of life is easily extinguished; and hence many of the precautions necessary at the one period of life are needful in the other also.

The food of the aged should be of the most digestible kind—

* At this period I attended a meeting of the vestry of my parish, held for the purpose of deliberating on what was to be done, and can well remember the difference of opinion which prevailed. I recommended the plan employed at Haslar, the copious administration of diluting drinks, such as barley water, or the tisane used in France, which is made of barley and liquorice; or until this could be prepared, plenty of warm water. This plan is adopted at the Hôtel Dieu at Paris in cases of fever—the patients being allowed to drink tisane ad libitum.

they should eat bread and well-cooked animal food, but very sparingly of vegetables. Food should be taken frequently and in small quantities, in order that the digestive organs, now become weak, may not be overloaded.

The languor of the circulation renders a little wine daily highly useful for the aged, but they should avoid as carefully as poison, indulgence in spirituous liquors.

The clothing of old people should be warm and loose fitting, but they must eschew such piles of clothing as are sometimes worn—for these are not necessary for warmth, and only exhaust and fatigue those who are burdened with them.

As the process of decay proceeds much more rapidly in the old than in younger persons, strict personal cleanliness is even more desirable now than at any other period of life. To this end frequent tepid baths should be taken—they accomplish this purpose, and have, moreover, a very beneficial effect on the skin, which in old persons is apt to become dry and harsh—tepid bathing remedies this, and makes it moist and soft, thus greatly contributing to the feeling of ease and comfort which helps to maintain a cheerfulness and contentedness of mind on which the health of the aged is very dependent.

“On quitting the bath, certain precautions should be used, a neglect of which might cause very different results from those sought. Every attention should be used to preserve the skin from the effects of the atmosphere, to which it is at this moment very sensible and susceptible. To gain this end, the body should be dried as quickly as possible, and speedily and warmly clad. Dry rubbing over the whole body, before the fire, will assist the good effects of the bath. Strict attention to these points is especially to be observed in cold, damp weather.”*

The best exercise for the aged is walking, but this should be gentle and not long continued, nor should any exertion be kept up by them so long as to occasion fatigue—this they cannot sustain, and should they foolishly incur it, it may often prove fatal.

The aged should beware of leading too sedentary a life in closed rooms—they should be as much in the open air as possible, and not sit for many hours together. They should particularly avoid soft stuffed seats, which are very apt to give rise to haemorrhoidal affections even in the young, but much more so in the old. Men who have belonged to sedentary professions are liable when they become advanced in years to be troubled by these annoying affections, and there can be little doubt that the long use of soft seats is the chief cause of this. Chairs with open cane bottoms are always preferable—in France they use a seat with a hole in the centre, but they are certainly unsightly.

* Salgues on the Health of the Aged.

Another practice to be avoided is standing or sitting with the back to the fire, which however pleasant in its immediate effects, is frequently the cause of an extremely unpleasant disease called nephritis.

The hours of retiring to rest should be early and regular, and therefore all evening concerts or parties must be avoided ; attendance at theatres also is generally hurtful. In fact exposure to vicissitudes of temperature are highly pernicious, and such places as those above-named are therefore, on this account also, not at all adapted for the aged.

To sum up, the aged must lead quiet, domesticated lives—avoid whatever would tend to disturb the equanimity of their minds, and not foolishly ape the young : let them be content to be old, and to act as becomes those who are so. By following this plan, they may yet enjoy many years of the truest happiness ; different in kind, no doubt, from that which belongs to the young, but more deeply felt ; their happiness should be chiefly moral and intellectual—the body is now worn out—the senses are dulled, but the mind still exists, and may be made the source of purer enjoyment than during the passionate turmoils of youth.

I have thus briefly explained the principal rules of health as applicable to the four periods of life, and to the circumstances of my countrymen, and believe that I have not omitted any important subject. At the same time I must again remark that I profess to explain only broad, general principles, and I feel convinced that a due application of these would tend to effect most beneficial changes in the sanatory condition of this country—changes which I have now for nearly ten years been endeavouring to bring about, and the accomplishment of any one of which I should esteem as the best reward of my labours.

THE END.

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